R&D PERFORMANCE POWER PLENUM AIR FILTER KIT

The R&D High Performance Power Plenum Air Filter Kit was designed, developed and dyno tested exclusively for the new Yamaha SHO/FZR supercharged intake system to unleash low-end, mid-range, and peak horsepower trapped in the restrictive stock air box. The exclusive lightweight filter design couples to the OEM supercharger hose and is engineered with a large 6"x10"x6" plenum to deliver massive cubic air volume and improved air speed to the supercharger. Replacing the O.E.M. air box with the R&D Filter kit offers an economical way to improve performance.

Description	Part No.
R&D FX-SHO/FZR/FZS Performance Power Plenum Air Filter Kit	200-01801

R&D VXR/VXS POWER PLENUM FILTER KIT

The R&D High Performance Power Plenum Air Filter Kit was designed and developed exclusively for the new Yamaha 1.8 liter N/A engine. The R&D filter kit will unleash low-end, mid-range, and peak horsepower trapped in the restrictive stock air box. The exclusive lightweight filter design couples to the OEM throttle body through a tuned built in velocity stack. The engineered oversized Tear Drop plenum, delivers the velocity and cubic air volume needed to add power. Power Plenum Filters generate the maximum airflow and volume.

Description	Part No.
R&D VXR/VXS Power Plenum Filter Kit	200-01805

R&D FX-SHO/FZR/FZS POWER PLENUM FLAME ARRESTER FOR STOCK AIR BOX

The R&D High Flow Filter design replaces the restrictive stock filter inside the stock air box, allowing improved air flow. Why? Because more air flow means more power and improved performance. The washable and reusable design means this will be the last filter you will ever have to buy.

Description	Part No.
R&D FX-SHO/FZR/FZS/VXR/VXS Power Plenum Flame Arrester	200-01800

R&D COLD AIR INLET KIT

The R&D Cold Air Adaptor Kit is a simple kit that allows the front hatch cowling to be modified by simply boring a hole in the cowling insert (located on the bottom side of the hatch cover) and installing the R&D molded plastic hose flange adaptor with kit supplied pop rivets. The R&D Flange allows one of the existing air intake hoses to be connected to the flange. The result is an inexpensive way to ventilate the engine compartment with cool outside air. The Cold Air Adaptor kit will improve airflow to the engine allowing power and RPM gains.

Description	Part No.
R&D Cold Air Inlet Kit	200-01806

R&D FX-SHO/FZR/FZS PRO COMP COOL AIR FILTER KIT

The system is designed and tested with boost levels above 23 pounds and speeds of 92+ MPH. The R&D System utilizes an oversized specifically designed 7.25" x 5.5" x 6" teardrop shaped R&D Power Plenum Filter w/crankcase vent that rubber mounts in the space over the top left side of the gas tank. The system ducts its air supply to the supercharger via an "Indy Car style" 3.5" mandrel bent Aluminum tube and couples to the supercharger with a 90° Nomex tapered reduction elbow. Power Plenum Filters generate the maximum airflow and volume and install in minutes. Recommended for the R&D C1, C3, C5, C20X and C23X Monster Supercharger Wheel kits and Superchargers. This system will also couple to the soon to be released R&D Cool Charger Housing, a 100% water-cooled supercharger Housing.

Description	Part No.
R&D FX-SHO/FZR/FZS Pro Comp Cool Air Filter Kit	200-01802

FOR INTAKE MANIFOLD

OEM

R&D

FOR INTERCOOLER

R&D FX-SHO POWER CORE INTAKE MANIFOLD/INTERCOOLER CFM KIT

The R&D FX-SHO/FZR/FZS Power Intake Manifold and Intercooler CFM Kit was developed to increase airflow into and through the intake system by relieving restrictions. The R&D FX-SHO/FZR/FZS intake manifold ribbon remover sleeve will unlock a 40 CFM (cubic feet per minute) air flow restriction by replacing the intake manifold ribbon with the R&D billet venturi sleeve. The R&D Intercooler Spacer will unlock a 30-35 CFM restriction in the intercooler. The R&D FX-SHO/FZR/FZS Intake Kit will add low end and mid range throttle response, and a full 100 plus rpms to top end performance to a stock FX-SHO/FZR/FZS. The R&D FX-SHO/FZR/FZS Intake Kit is an absolute must have parts kit to remove intake restrictions before contemplating power adding compressor booster wheels or turbo charger kits to the FX-SHO/FZR/FZS engine. True horsepower gains on the ßFX-SHO/FZR/FZS start right here with the R&D Intake Kit. More airflow will equal more power, and there is no other way around the fact that restricted is restricted power.

Description	Part No.
R&D FX-SHO/FZR/FZS Power Core Billet Intake Manifold Sleeve & Intercooler Spacer CFM Kit	612-18000
R&D FX-SHO/FZR/FZS Power Core Intake Manifold Sleeve Only	612-17998
R&D FX-SHO/FZR/FZS Intercooler CFM Spacer Only	612-17999
R&D VXR/VXS Power Sleeve Intake Manifold Upgrade Kit	232-18000

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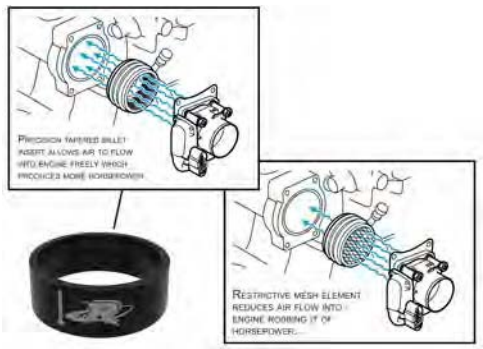
RIVA VXR/VXS POWER FILTER KIT

RIVA's VXR/VXS Power Filter is a true "cold air" intake system that draws cool air from outside your engine compartment delivering significant performance gains. Utilizes OEM hood scoop to feed air into an ultra-dry water trap system for reliable operation in rough water conditions. Cold air is delivered to engine via large 4" smooth-bore ducting that is secured to throttle body with unique velocity stack and sturdy billet clamps. Kit also includes an improved breather system that keeps hot oil vapor and crankcase fumes from entering your engine's air intake. Requires use of Engine Breather Uptake Kit (RY14040-EBUK-1)

Key Features:

- Delivers increased acceleration & top speed.
- True "cold air" system utilizes OEM hood scoop.
- Ultra-dry water trap keeps water out of system.
- Genuine screen type K&N Flame Arrestor & water repellent prefilter cover.
- Large 4" smooth-bore ducting attaches to engine via flow-matched velocity stack.
- Includes updated crankcase breather system for improved performance.

Description	Part No.
RIVA VXR/VXS Power Filter Kit	RY13060
Power Filter Only (for RY13060)	RK13090-2



RIVA YAMAHA 1.8L N/A ENGINE INTAKE MANIFOLD UPGRADE KIT

RIVA's Intake Manifold Upgrade Kit enables your 1.8L naturally aspirated engine to produce more horsepower by delivering increased air flow. Precision tapered billet sleeve directly replaces restrictive mesh element in the intake manifold. Provides improved low end punch and mid range pull through a quick & easy installation. Includes detailed installation instructions. NOTE: Testing has determined the stock ECU will compensate for the increased air flow provided by the Intake Manifold Upgrade Kit. Requires RIVA Power Filter Kit to meet U.S. Coast Guard certified flame arrestor requirements. IJSBA Stock Class Legal.

Description	Part No.
RIVA Yamaha 1.8L N/A Engine Intake Manifold Upgrade Kit (VXR/VXS)	RY12055-IMUK

RIVA PERFORMANCE YAMAHA FX-SHO/FZR/FZS POWER FILTER KIT

The RIVA Power Filter feeds your FX-SHO, FZS or FZR a steady diet of cool air delivering greatly improved acceleration and rpm. Replaces restrictive stock air box with a high-volume, precision-formed intake duct that attaches to the supercharger via a large 4" adapter. Cool air enters the system via an oversized K&N filter element. Includes water-repellent pre-filter.

Description	Part No.
RIVA FX-SHO/FZR/FZS Performance Power Filter Kit	RY13040
Power Filter Only (for RY13040)	RK13090-2

RIVA FX-SHO/FZR/FZS INTAKE MANIFOLD UPGRADE KIT

RIVA's Intake Manifold Upgrade Kit enables your engine to produce more horsepower by delivering increased air flow and boost pressure (+1lb). Precision tapered billet sleeve directly replaces restrictive mesh element in the intake manifold. Provides improved low end punch and mid range pull through a quick & easy installation. Includes detailed installation instructions. *NOTE: Testing has determined the stock ECU will compensate for the increased boost provided by our Intake Manifold Upgrade Kit.*

Description	Part No.
RIVA FX-SHO/FZR/FZS Intake Manifold Upgrade Kit	RY12040-IMUK

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R&D FX-SHO/FZR/FZS C1 MONSTER CHARGER WHEEL

R&D's new C1 11 Blade Series Monster Compressor Wheel Kit for Yamaha FX-SHO/FZS/FZR engines is new and improved to deliver "horsepower you can feel" with instant throttle response, improved mid range acceleration, and increased top end performance. The R&D Monster Wheel replaces the stock wheels inefficient 5 blade design with an all new modern low profile, high flow, 11 blade high tech design. Fits directly into the O.E.M. stock compressor housing with no modifications. The C1-11 Monster works with the OEM intercooler, OEM fuel injectors, OEM ignition system and the R&D Intake CFM Kit. Kit performs well on 91 octane pump gasoline. Boost rated 7psi @ 7500rpm and 8.5psi @ 7700rpm. Horsepower increases were professionally documented by MOTEC AUSTRALIA.

- Increased boost pressure (3-3.5psi over stock @ 7700 rpm)
- Increased airflow (1.5-2 pound per minute gain)
- 25-30 Horsepower increase and 2 MPH Gain (with OEM ignition)
- 70 Horsepower increase (with Motec ECU, CFM kit, 91 pump gas)
- Precision balanced (turbo specs .012-.027 gram inches)
- Better throttle response, increased horsepower • Ultra easy installation
- 91 octane pump gas friendly • Inexpensive horsepower upgrade

The C1 Wheel Kit works excellent for recreational use applications retaining the OEM ignition, fuel system, injectors, and intercooler. R&D has data logged and documented the A.F.R. (air to fuel ratio) to be a conservative and safe 11.8-12.0 with the C1 wheel kit. R&D recommends that the R&D Power Core Intake Manifold and intercooler CFM kit or the R&D Stage 1 Intercooler Kit be used with the C1 wheel.

Description	Part No.
R&D FX-SHO/FZR/FZS C1 Monster Charger Wheel	612-25001

R&D FX-SHO/FZR/FZS C3 MONSTER CHARGER WHEEL

R&D's new C3-11 Blade Series Racing Monster Compressor Wheel Kit for Yamaha FX-SHO/FZS/FZR engines is an exciting new racing product that will deliver "horsepower you can feel" with instant throttle response, aggressively improved low and mid range acceleration, and increased top end performance. The R&D Monster Wheel replaces the stock wheels low performing 5 blade design with a modern low profile, high flow 11 blade high tech design with a larger exducer diameter to move more air flow at lower rpm's producing better holeshot horsepower. The R&D C3 Monster Wheel and R&D Exducer Seal Plate Kit will install directly into the O.E.M. stock compressor housing with no modifications. The C3 Racing Monster will require the R&D High Performance Intercooler Kit, and an R&D Impellor upgrade. The C3-11 performs well on 91 octane pump gasoline. Boost rated 10psi @ 7700rpm and 13psi @8300rpm. The new R&D 11 blade series compressor wheels offer the highest levels of airflow and horsepower gains available for the 1.8 Yamaha engine using the stock E.C.U.

- Increased boost pressure (5psi over stock @ 7700 rpm)
- Increased airflow (2.5-3 pound per minute gain)
- 35+ Horsepower increase and 2 MPH Gain (with stock ECU)
- 300+ Horsepower using aftermarket ECU (MOTEC)
- Precision balanced (turbo specs .012-.027 gram inches)
- Utilizes O.E.M. ignition system with R&D Impellor Upgrade
- Utilizes O.E.M. fuel injectors • 91 octane pump gas friendly

NOTE: The C3 Monster Wheel Kit will require pump impellor upgrades over the C1 impellor suggestions.

Description	Part No.
R&D FX-SHO/FZR/FZS C3 Monster Charger Wheel	612-25003

R&D SHO/FZR/FZS C5 MONSTER CHARGER WHEEL

The new "drop-in" R&D C5 Monster Compressor Wheel and Exducer Seal Plate Kit installs directly into the OEM supercharger without any modification. The new C5 delivers "horsepower you can feel" with instant throttle response, aggressively improved low and mid range acceleration, and intensified top end performance. The new C5 features a light weight, high flow, 8 blade design with 8 supporting splitter veins and an increased exducer diameter over stock. R&D's large exducer diameter and aggressive blade design is the key to improving CFM airflow volume throughout the RPM range. The oversized exducer diameter increases the size of the supercharger by enhancing air pumping volume and efficiency. The C5 out performs any OEM sized compressor wheel in its boost pressure classification.

The R&D Monster Wheel Kit produces 14-15 pound per minute airflow gain with a solid 15-16 pounds of boost pressure @ 8400-8500 rpm, 17+ @ 8700-8800 rpm. The new drop-in R&D C5 also offers superior off throttle surge reduction over other 15-16 pound boost wheels. The new R&D C5 series compressor wheels offer the highest levels of airflow and horsepower gains available for the 1.8L Yamaha engine in the 15-17 pound boost range. A properly tuned C5 set up (with supporting modifications) can produce well over 325 horsepower. In addition, no other rotating group on the market is lighter or more powerful than the new C5 Monster Wheel combined with the R&D Billet Supercharger Shaft.

In sum, the R&D C5 Monster Wheel and Shaft weighs less, has less surge, rockets to 80 in less seconds and carves through corners in less time than any other wheel and shaft in its class. Hit the throttle, hang on and discover the astounding sensation that's called Power!

- Aggressive throttle response, increased horsepower
- Increased boost pressure (10psi over stock @ 8500 rpm)
- Increased airflow volume (14-15 pound per minute gain)
- 100+ horsepower increase (with R&D R3 ECU)
- 325+ horsepower using aftermarket ECU
- Precision balanced (turbo specs .012-.027 gram inches)
- Utilizes O.E.M. Reprogrammed R3 ECU ignition system
- Utilizes O.E.M. fuel injectors w/R&D RRFPR, R3, and Powershot
- 91 octane pump gas friendly with R3 ECU
- Less weight and surge
- Easy installation

C5 Modification Requirements:
R&D High Performance Pro Series Intercooler Kit w/R&D Greddy BOV
R&D Rising Rate Fuel Pressure Regulator Kit
R&D R3 ECU upgrade to allow 8500-8850 RPM
R&D Powershot
R&D Engine/intercooler Cooling Kit
R&D Twin Prop

NOTE: The C5 Monster Wheel will work best in sea level to 2000 ft. elevations, or in ambient air temperatures between 60 and 100 degrees. NOTE: The C5 Monster Wheel Kit will require serious impellor upgrades.

Description	Part No.
SHO/FZR/FZS C5 Monster Charger Wheel	612-25005

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R&D FX-SHO/FZR/FZS C8 MONSTER WHEEL

The new "drop-in" R&D C8 Monster Compressor Wheel and Exducer Seal Plate Kit installs directly into the OEM supercharger without any modification. The new C8 delivers "horsepower you can feel" with instant throttle response, aggressively improved low and mid range acceleration, and intensified top end performance. The new C8 features a light weight, high flow, 8 blade design with 8 supporting splitter veins and an increased exducer compression height over stock. R&D's larger exducer height and aggressive blade design is the key to improving CFM airflow volume throughout the RPM range. The increased exducer height dimension increases the size of the supercharger by enhancing air pumping volume and efficiency. The C8 out performs any OEM sized compressor wheel in its boost pressure classification. After all, its airflow volume gains that increase horsepower.

The R&D Monster Wheel Kit produces 18 plus pounds of boost pressure @ 8700-8900 rpm, 16+ @ 8500-8600 rpm. The new drop-in R&D C8 also offers superior off throttle surge over other 16-18 pound boost wheels. Less surge increases supercharger clutch reliability.

The new R&D C8 series compressor wheels offer the highest levels of airflow and horsepower gains available for the 1.8L Yamaha engine. A properly tuned C8 set up (with supporting modifications) can produce well over 325+ horsepower. In addition, the rotating group of the new C8 Monster Wheel combined with the R&D Billet Supercharger Shaft is the undisputed Light Weight Champ, no other rotating group on the market is lighter or more powerful.

Less is More
In sum, the R&D C8 Monster Wheel and Shaft weighs less, has far less surge over competitors' wheel kits, rockets to 80 in less seconds and carves through corners in less time than any other wheel and shaft on the planet. Hit the throttle, hang on and discover the astounding sensation that less IS more …much, much more.

- Aggressive throttle response, increased horsepower
- Increased boost pressure (12psi over stock @ 8800 rpm)
- Increased airflow volume (14-15 pound per minute gain)
- 100+ horsepower increase (with R&D R3 ECU)
- 350+ horsepower w/supporting parts
- Precision balanced (turbo specs .012-.027 gram inches)
- Utilizes O.E.M. Reprogrammed R3 ECU ignition system
- Utilizes O.E.M. fuel injectors w/R&D RRFPR, R3, and Powershot
- 91 octane pump gas friendly with R3 ECU
- Less weight and surge
- Easy installation

C8 Modification Requirements:
R&D High Performance Pro Series Intercooler Kit w/R&D Greddy BOV
R&D Rising Rate Fuel Pressure Regulator Kit
R&D R3 ECU upgrade to allow 8500-8850 RPM
R&D Powershot
R&D Engine/intercooler Cooling Kit
R&D Twin Prop

Boost rating: 12psi @ 7800rpm, 15/16psi @ 8400-8500rpm, 17psi @ 8700-8800rpm, 18psi @ 9200-950rpm.

NOTE: The C8 Monster Wheel will work best in sea level to 2000 ft. elevations, or in ambient air temperatures between 60 and 100 degrees. NOTE: The C5 Monster Wheel Kit will require serious pump impellor upgrades.

Description	Part No.
FZR C8 Monster Charger Wheel	612-25008

R&D FX-SHO/FZR/FZS C20X MONSTER WHEEL

Twenty pounds of boost now available. R&D's leading the way in performance with the new C20X Racing Monster Compressor Wheel Kit for the Yamaha FX-SHO, FZ, and FZR. The C20X delivers arm stretching power like you have never experienced. The C20X pumps out 18 pounds of boost @ 8500-8700 rpm and 20 pounds of boost @ 9000 rpm with a 17.5-18.5 pound per minute airflow gain through its high flow 8 blade wheel design featuring oversized inducer and exducer wheel diameters. R&D's large inducer and exducer wheel diameters along with an aggressive blade design are the key to improving CFM airflow volume throughout the RPM range. The oversized inducer and exducer diameters increase the size of the supercharger by enhancing air pumping volume and efficiency. After all, its airflow volume gains that increase horsepower. The C20X Racing Monster wheel requires the R&D High Performance Pro Series Intercooler Kit, R&D 1000cc Fuel Injectors, R&D Rising Rate Fuel Pressure Regulator Kit, and an aftermarket ECU (MoTeC or ViPEC) upgrade to allow proper engine tuning. R&D also suggests upgrading to R&D Forged Racing Rods and Performance Pistons. The new R&D C20X is for Racing use only and requires 110 octane racing fuel. Boost rated to 18 plus at 8500-8700 and 20 pounds at 9000. The new R&D C20X series compressor wheels offer the highest levels of airflow and horsepower gains available for the 1.8 Yamaha engine. Aftermarket ignition systems and a C20X Monster properly tuned can achieve up to 400 Horsepower.
The new C20X will require a shop service to bore out your compressor front housing to except the larger C20X compressor wheel. For those customers that have previously purchased the C5-11 and already have the shop service to the compressor front housing, just order the C20X wheel kit and change out the wheel. No other supercharger compressor wheel kit has stolen more holeshots and won more National and Offshore Titles than the R&D Monster Wheel Kits. If 20 pounds of boost is truly what you're looking for, well look no further and just give us a call. The new C20X has been tested against all other existing wheels on the market and is guaranteed to blow them away!

- Aggressive throttle response, increased horsepower
- Increased boost pressure (+12psi over stock @ 8700 rpm)
- Increased airflow (17.5-18.5 pound per minute gain)
- 150-175 horsepower increase
- Aftermarket ECU REQUIRED (MOTEC M400/ViPEC)
- Aftermarket R&D Fuel Injectors REQUIRED
- Aftermarket R&D RRFPR REQUIRED
- Precision balanced (turbo specs .012-.027 gram inches)
- Utilizes O.E.M. fuel injectors w/R&D RRFPR, R2 and Powershot
- VP C12 octane RACE gas friendly
- Easy installation

NOTE: The R&D C20X Monster Compressor Wheel delivers a 17.5-18.5 pound per minute airflow gain (approximately 150 plus horsepower at sea level at 8500 rpm's). Pound per air volume gain is based on the rate of 1 pound of air gain per minute for every 8-10 H.P. gain. The C20X Monster Wheel will work best in sea level to 2000 ft. elevations, or in ambient air temperatures between 60 and 100 degrees. R&D strongly suggests that the R&D High Performance Racing Intercooler Kit, Aftermarket ECU, R&D RRFPR be installed with the C20X Kit. Trust the pros at R&D to boost up your airflow volume, after all, its airflow volume gains that increase horsepower. NOTE: The C20X Monster Wheel Kit requires serious pump impellor upgrades.

Description	Part No.
C20X Monster Wheel And Exducer Kit Only	612-25006
C20X Monster Wheel And Exducer Kit with Machining Service to your Front Housing	612-25007
Watercooled Supercharger Cover for C20X	612-24001

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R&D FZR C19 MONSTER PRO LIMITED WHEEL KIT

R&D now offers the new C19 Monster Pro Limited Wheel Kit. The new Billet C19 Monster Compressor Wheel is specifically developed to pump maximum boost and CFM possible utilizing the O.E.M. compressor housing. R&D has taken full advantage of the IJSBA's new rule allowance to change out the compressor wheel backing plate to an aftermarket part. R&D has increased the exducer size and deck area to pump as much air as the stock housings will possibly allow with bolt in parts. The C19 pumps out 19 pounds of boost @ 8600-8800 rpm and up to 20 pounds of boost @ 9000 rpm. The C19's large exducer wheel diameters along with an aggressive blade design are the key to pumping more CFM airflow volume throughout the entire RPM range. The new R&D C19 series compressor wheels offer the highest levels of boost, CFM airflow, and horsepower gains available for the 1.8 Yamaha engine in Pro Limited Class category. The R&D C19 Monster Wheel, R&D Racing Camshafts, and a properly tuned fuel and E.F.I. system can achieve up to 400 horsepower.

If "Max Boost" is truly what you're looking for, look no further and give the pro's at R&D a call. The new C19 has been tested against all other existing wheels on the market that fall into Pro Limited Class Specs, and is guaranteed to out boost and out power them all! The C19 wheel requires the use of an intercooler system capable of flowing 500 CFM (Most on the market are not even close to 500 CFM and are restrictive). R&D suggests the use of an R&D Racing Intercooler Kit (600+ CFM rated), R&D Rising Rate (adjustable) Fuel Pressure Regulator Kit, R&D Super Clutch System and an R&D Pro Limited ECU Program upgrade to ensure proper engine tuning, and proven (safe) rev control functions. R&D also suggests upgrading to R&D 8.6-1 Forged Racing Pistons.

- Aggressive throttle response, increased horsepower
- Increased boost pressure up to 20 pounds (boost will vary depending on cam spec data)
- Increased airflow (20 pound per minute gain over stock)
- 150-175 horsepower increase over stock @205-210) (depending on cam spec data)
- R&D ECU Reprogramming REQUIRED (specify fuel type)
- R&D aftermarket fuel pump system REQUIRED
- R&D fuel pressure regulator REQUIRED
- VP MS109 octane RACE gas friendly

NOTE: The R&D C19X Monster Compressor Wheel delivers 41-42 pounds of air per minute, that's and additional 20 pound per minute airflow gain over a stock compressor. Pound per air volume gain is based on the rate of .9 pound of air gain per minute for every 8-10 H.P. gain. The C19 Monster Wheel will work best in sea level to 2000 ft. elevations, or in ambient air temperatures between 60 and 100 degrees. The C19 Monster Wheel Kit power output will require serious pump assembly, impellor, and compression nozzle upgrades. Call R&D for the latest in pump assembly and impellor suggestions.

Description	Part No.
R&D Billet C19 Monster Wheel Kit	612-25009

R&D FZR C24 MONSTER WHEEL & WATER COOLED COMPRESSOR HOUSING KIT

R&D now offers the new C24 Monster Wheel & Water Cooled Compressor Housing Kit. The new Billet C24 Monster Compressor Wheel and Water-cooled Housing System can pump up to 24 pounds of boost utilizing the OEM cams and cam timing. The C24 pumps out 20-22 pounds of boost @ 8600-8800 rpm and 24 pounds of boost @ 9000 rpm. The C24's large inducer and exducer wheel diameters along with an aggressive blade design are the key to pumping more CFM airflow volume throughout the entire RPM range. The R&D C24 series compressor wheels offer the highest levels of airflow and horsepower gains available for the 1.8 Yamaha engine. The R&D C24 Monster Wheel, R&D Racing Camshafts, and a properly tuned ECU and E.F.I. system can achieve well over 425+ horsepower. The C24 Water Cooled system was used by Ron Allison to win the 2011 HydroDrag Pro Super Stock Speed Alley competition.

The C24 wheel requires the use of an intercooler system capable of flowing 500-600 CFM. (Most on the market are not even close and are restrictive) R&D suggests the use of an R&D High Performance Intercooler Kit (600 cfm plus rated), R&D 1000cc Fuel Injectors, R&D Rising Rate (adjustable) Fuel Pressure Regulator Kit, and an R&D R12 ECU Program upgrade to the stock ECU to ensure proper engine tuning, and proven (safe) rev control functions. R&D also suggests upgrading to R&D Forged Racing Rods and Performance Pistons.

- Aggressive throttle response, increased horsepower
- Increased boost pressure up to 24 pounds (boost will vary depending on cam spec data)
- Increased airflow (26 pound per minute gain over stock) (49 pounds total at 450 h.p.)
- 220-240 horsepower increase over stock @205-210 (with supporting modifications)
- R&D R12 ECU Reprogramming **REQUIRED**
- R&D 1000cc Fuel Injectors **REQUIRED**
- R&D fuel pressure regulator **REQUIRED**
- VP C12 octane RACE gas friendly
- Installs on to the OEM Supercharger with no modifications

NOTE: The R&D C24X Monster Compressor Wheel delivers a 49-50 pounds of air per minute, that's and additional 26 pound per minute airflow gain over a stock compressor. Pound per air volume gain is based on the rate of .9-1 pound of air gain per minute for every 8-10 H.P. gain. The C24 Monster Wheel will work best in sea level to 2000 ft. elevations, or in ambient air temperatures between 60 and 100 degrees. The C24 Monster Wheel Kit power output will requires serious pump assembly, impellor, and compression nozzle upgrades. Call R&D for the latest in pump assembly and impellor suggestions.

Description	Part No.
R&D Billet C24 Monster Wheel and Water Cooled Compressor Housing Kit	612-25010
R&D Billet C24 Monster Wheel Kit	612-25011

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R&D FZR WATER-COOLED SUPERCHARGER SYSTEM

Ever wonder why the supercharger is so HOT? Heat is a derivative of compressed air (boost). The more boost pressure, the hotter the supercharger gets. The engineers at R&D understand the key in producing more horsepower and maximizing performance, is managing heat.

R&D is proud to announce the new Water-Cooled Supercharger Housing System. The new R&D Water-Cooled Supercharger System is fully water jacketed and eliminates heat at its source, the Supercharger. The new system replaces the OEM inducer cover and mounts directly to the OEM Supercharger body.

The system features a High Performance Volute (intake air path), Internal Anti-Surge Port, 100% Water-Cooling and a custom R&D Power Plenum Air Filter. Now since the Supercharger is the coolest part in the engine compartment and runs at lake temperature, it only made since to design a custom R&D Power Plenum Air Filter that would take full advantage of the new found cool air, now located directly in front of the Supercharger.

System installs in 45 minutes and comes complete with all necessary hardware and pictorial instructions.

Performance Benefits: Up to 200° F cooler supercharger temperature, cooler and denser intake air, decreased engine compartment temperature, improved clutch life through Internal Anti-Surge Port, increased RPM (up to 200 rpm), increased boost pressure, improved top speed, no heat fade, consistent peak engine rpm.

Fitment: The R&D Water-Cooled System fits all supercharger wheels that fit into the OEM charger housing.

Description	Part No.
R&D SHO/FZR/FZS Water-Cooled OEM Supercharger System for (C1, C3, and C5)	612-24000
R&D SHO/FZR/FZS Water-Cooled Supercharger System (For C20X)	612-24001

R&D SUPERCHARGER BLOCK-OFF PLATE

The R&D Supercharger Block-off Plate is designed to seal the case on the front of the engine that is exposed when the supercharger is removed for a Turbo.

Description	Part No.
R&D Supercharger Block-off Plate	612-19100

RIVA FX-SHO/FZR SUPERCHARGER IMPELLERS

RIVA Racing released the ultimate (drop-in) performance supercharger impellers for the Yamaha 1.8 liter FX-SHO Engine! Working closely with Vortech Engineers, RIVA designed these impellers to deliver more horsepower and torque throughout the RPM range resulting in excellent acceleration and top speed. Investment cast from an extremely strong, lightweight proprietary aluminum and CNC machined to ensure exact tolerances. All new blade design is optimized aerodynamically and precision balanced to deliver smooth operation. Installs easily into stock supercharger housing with no modifications required. Includes detailed installation instructions.
B1 produces 11.5psi @ 7,700rpm • E1 produces 16psi @ 8,000rpm

NOTE: Both impellers require use of aftermarket engine management system for proper calibration

Description	Part No.
RIVA FX-SHO/FZR S/C Impeller - 11.5 psi	RY17040-SCI-B1
RIVA FX-SHO/FZR S/C Impeller - 16 psi	RY17040-SCI-E1

RIVA FX-SHO/FZ 'H1' RACE CHARGER IMPELLER & HOUSING

The 'H1' Race Charger was designed for serious racers and tuners who demand the ultimate performance gains. H1 Impeller and housing combo delivers 20psi of boost pressure at 8,500rpm producing up to 400hp on modified engines. High performance impeller and housing combo increase horsepower through superior blade design and larger interior housing volume. Impeller features a sophisticated HKS blade design that is precision balanced for smooth operation. Requires aftermarket ECU and upgraded engine components for proper calibration and durability.

FOR COMPETITION USE ONLY. RIVA Racing is not liable for possible damage to associated parts or labor costs incurred due to the installation of this racing component.

Performance Data:
• 16.5psi @ 7,500rpm • 17psi @ 7,700rpm
• 18psi @ 8,000rpm • 20psi @ 8,500rpm

Description	Part No.
RIVA FX-SHO/FZ 'H1' Race Charger Impeller & Housing	RY17040-IH-H1

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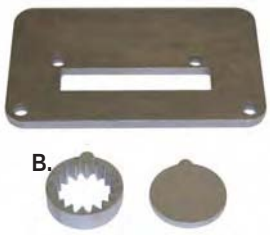
ENGINE-TECH YAMAHA FZR SUPERCHARGER IMPELLER

This is a drop in impeller so no modifications to the housings are necessary. Weighing a mere 106 grams this is the lightest impeller on the market reducing wear and tear on the clutch/shaft assembly. Output is 15+ psi @7700 rpm and an amazing 18+psi @8500 rpm.

Must be used with adjustable fuel regulator, high flow intercooler and ECU (Motec or equiv, Motec map available upon request)

Description	Part No.
Engine-Tech FZR SC Impeller (18+ lbs)	ETYAMSHO



R&D SPECIALTY SUPERCHARGER TOOLS

R&D has designed custom tools that are essential in the rebuilding process of the Yamaha Supercharger. All tools are specific in application and are CNC machined to ensure a precision job.

Description	Part No.
A. Supercharger Housing Holder Bracket Tool	612-92010
B. Shaft/Gear Holding Tool	612-92011

RIVA YAMAHA FX-SHO/FZ HEAVY DUTY SHAFT UPGRADE KIT

RIVA Heavy-duty Supercharger Shaft Upgrade Kit delivers increased strength & reliability to your Yamaha SC System. Upgraded shaft & bearings directly replace OEM parts for maximum durability in performance applications. Manufactured exclusively for RIVA by HKS, these components feature superior materials & finishing treatments for reduced friction and abrasion resistance.

Key benefits include:

- Reduced friction between moving parts
- Increased fatigue strength in parts
- Higher resistance to surface abrasion
- Improved seize resistance

Kit includes supercharger shaft, 2 bearings, shaft nut and instructions.

Description	Part No.
RIVA Heavy-Duty SC Shaft Upgrade Kit	RY17040-UK-6S5

RIVA FX-SHO/FZ HEAVY DUTY SUPERCHARGER BEARING

RIVA's heavy duty one-piece bearing features increased surface area providing improved torsional stability of supercharged shaft. Bearing is constructed with superior materials & finish treatment for reduced friction & abrasion resistance. Compatible with all RIVA Supercharged Shaft Kits as well as OEM supercharger shaft.

Description	Part No.
RIVA Heavy-Duty Supercharger Bearing	RY17040-HDSCB-6S5

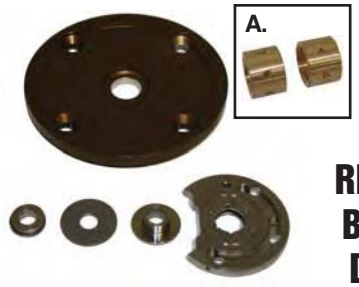
R&D YAMAHA SHO/FZR BILLET SUPERCHARGER SHAFT KIT

R&D's new High Performance Billet Supercharger Shaft eliminates the weak design features of the OEM and aftermarket HKS supercharger shafts. After analyzing the OEM HKS shaft design and sorting through the various failures we had with it while testing our popular Monster S/C Wheels, we developed a superior shaft design. The new R&D shaft is not a copy of the fragile HKS design. Rather, it is a completely new design, superior in material strength and improved in every way. The new R&D Shaft is precision CNC machined, heat treated, and precision ground from billet steel alloy. Featuring a uni-structure design that incorporates the shaft and gear as one billet piece, much like a transmission shaft. This eliminates the fracture point on the OEM design where the gear shears off the end of the shaft. The billet design will not allow the gear to slip under high boost loads like the pressed on OEM gear.

Next R&D increased the inadequate 6mm thread diameter on the OEM shaft to utilize a well proven "Turbo spec" LARGER 5/16-24 left handed thread that will not break under extreme conditions. The larger thread diameter will also allow wheel torque specs to be increased safely.

Lastly, R&D reduced the weight of the R&D Supercharger shaft by eliminating the hex nut on rear the gear and lightened the end of the shaft/gear inside diameter to significantly reduce reciprocating weight. We all know what that will do to add to clutch performance. Kit comes complete with larger nut and installation instructions. All in all, the new R&D High Performance Billet Racing Shaft is not just a replacement shaft, but a solution to end all supercharger shaft problems.

Description	Part No.
R&D FX-SHO/FZR Billet Supercharger Shaft Kit	612-25020



R&D FX-SHO/FZR HIGH PERFORMANCE SUPERCHARGER REPLACEMENT THRUST BEARING/SEAL KITS & DUPLEX BEARING KIT

R&D offers an answer to both repairing & upgrading the O.E.M. superchargers vulnerable thrust bearing and main shaft bearing assemblies. Engines with superchargers running higher boost pressures and higher rpm frequencies will eventually need bearing servicing. Servicing the supercharger main bearings periodically or upgrading to R&D's new "Duplex Bearing System" will extend the life of the superchargers thrust bearing significantly. R&D offers both standard replacement bearing kits, and the new "Duplex Bearing Kit" that will work in any Yamaha supercharger. R&D also offers complete rebuild kits for stock superchargers running C1 Monster Wheel Kits and all supercharger wheel kits using the stock exducer size. R&D also offers rebuild kits for all C3, C5, C7 Monster Wheel Kits with larger exducers.

Description	Part No.
A. OEM Replacement Bearing Kit (stock/ltd class legal)	612-25025
Supercharger Rebuild Kit with OEM Exducer/Thrust Bearing Assembly Kit	612-25028
Supercharger Rebuild Kit with C3/C5 Exducer/Thrust Bearing Assembly Kit	612-25030

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RIVA 'GEN-3' SUPER-DUTY SUPERCHARGER SHAFT KIT

RIVA's Super-Duty 'GEN-3' Supercharger Shaft Kit provides the ultimate in reliability for high boost applications. Kit features a revolutionary hydraulic shaft stabilization bearing that limits shaft deflection and wear. Bearing stabilizes end of supercharger shaft via high pressure oil film dramatically increasing the stability of the system. Hydraulic end bearing and one-piece shaft bearing are fed by a through-shaft oiling system providing superior lubrication. Oil is delivered by braided stainless line and injected into a billet end cap that houses hydraulic bearing. Shaft is precision machined from a single piece of highstrength billet steel producing shaft, collar & gear as one piece. This eliminates the common failure point on stock shafts where OEM gear is pressed onto shaft. Shaft also features larger diameter threads & nut for added strength. Kit includes new one piece bearing with increased surface area providing improved torsional stability of shaft. Bearing features superior materials & finish treatment for reduced friction & abrasion resistance. This Shaft & Bearing Kit is a direct replacement for OEM parts and requires no additional modifications for use.

Key Features Include:
- Hydraulic end bearing minimizes shaft deflection.
- Through-shaft oiling system maximizes lubrication.
- Braided stainless steel oil line delivers additional lubrication.
- One piece shaft/collar/gear construction.
- Stronger billet material & superior surface finish.
- Larger diameter threads & nut.
- One-piece bearing improves shaft stability.
- Bolt-on installation (no machining required).
- Manufactured exclusively for RIVA Racing by HKS.

Description	Part No.
RIVA 'Gen-3' Super-Duty Supercharger Shaft Kit for FZR/FZS & FX-SHO	RY17040-UK-6S5-3

RIVA SUPERCHARGER GEAR DAMPENER

RIVA's damper unit is designed to protect gear teeth & sprag clutch on supercharger drive system. Dampener features innovative cushioning mechanism that insulates gears from harsh clutch engagement. Directly replaces OEM intermediate gear located between clutch and supercharger shaft. Constructed with superior materials and thicker gear teeth than OEM. Designed to be used with new style 2011/12 Yamaha clutch (part# 6S5-17800-10-00) and RIVA Supercharger Shaft Upgrade Kits.

Key Features Include:
- Dampener mechanism protects supercharger drive gears.
- Improves sprag clutch durability.
- Stronger materials and thicker gear teeth than OEM.
- Directly replaces OEM intermediate gear.
- No auxiliary clutch systems or maintenance required.
- Superior bearing material & thickness.
- Use with new style 2011/12 Yamaha clutch and RIVA Supercharger Shaft Kits.
- Manufactured exclusively for RIVA Racing by HKS.

Description	Part No.
RIVA Supercharger Gear Dampener	RY17040-SGD-6S5

R&D YAMAHA SUPERCLUTCH DRIVE GEAR

The R&D engineering staff has spearheaded another industry first. We are proud to introduce the new Revolutionary R&D Super Clutch Drive Gear System. This is the first Yamaha Drive Gear that features a clutch system. The Super Clutch Drive Gear has a "Double Action" 2-way clutch system that utilizes an "Oil-Loaded" Friction Disc Design which cancels and neutralizes constantly changing rotational mass energies, and aggressive moment-of-inertia shock loads that cause premature OEM Sprag clutch and gear failures.

The R&D Super Clutch Drive Gear System is CNC machined from premium billet steel alloy, heat treated for Bionic strength and hardness, precision ground to strict aircraft tolerances, and polished for a low friction finish.

This system features a unique billet steel Gear-Hub design that uses a high pressure through-shaft oiling technique to lubricate the drive gear bearings and clutch friction discs. The 50 tooth Drive Gear is also machined from billet steel alloy, heat treated for ultimate strength and hardness, and the tooth profile is CNC precision ground to Yamaha specifications. The clutch surfaces of the gear feature special "oil-holding" wiper slots that provide improved oiling to increase lubrication to the clutch discs. Knowing the detriment to the Sprag clutch of a heavy Drive Gear, we designed the Super Clutch Drive Gear with 6 lightening window pockets to have the least amount of rotational weight. The complete system tips the scales at only 382.8 grams, that's 15% lighter than the OEM Drive Gear.

The clutch discs are precision machined, heat treated, and ground to exact tolerance utilizing only the finest materials tested and proven to be the best in these type systems. The clutch is adjustable for any boost pressure.

This is a bolt-on clutch upgrade. There is no machine work required to install. The Super Clutch is compatible with all years of OEM Sprags clutches and all OEM or Aftermarket Yamaha supercharger shafts.

Technology and Design performance make this Super Clutch the finest and most effective clutch system available. Order yours today, and Crank up the Boost!

Performance Features:
- Heavy Duty, Bionic Strong, Billet Steel Construction
- Heat Treated, Precision Ground, and Low Friction Polished
- Super Clutch 2-Way System Eliminates the Forces that Cause Premature OEM Sprag Clutch and Gear Failures
- Adjustable for ANY Boost Pressure
- Through-Shaft Oil Pressure Lubricated Bearings and Clutch
- 15% Lighter than OEM Drive Gear Rotating Mass
- Directly Replaces OEM Drive Gear
- Compatible with all years of OEM Clutches
- Compatible with all OEM/Aftermarket S/C Shafts
- Easy Clutch Adjustments with Supplied Tool Kit
- No Modification Required to Install

Description	Part No.
R&D Yamaha Superclutch Drive Gear	612-19300

*Available early Summer 2012

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R&D YAMAHA SUPERCLUTCH

The R&D Superclutch elevates all clutch performance aspects to a higher level. The Superclutch is a supplemental clutch system that is designed "specifically" for the Yamaha to be used along with the OEM Sprag drive system. The R&D clutch design utilizes an "Oil-Loaded" Friction Disc design which will dampen constantly changing rotational mass energies, and aggressive moment of inertia shock loads that have proven to over stress the OEM Sprag clutch drive and cause failures.

The new R&D Superclutch and shaft system is CNC machined from premium billet steel alloy, heat treated, and precision ground between centers to strict aircraft tolerances. This R&D system features a unique one-piece billet shaft design that utilizes a proven high pressure, through-shaft oiling technique to lubricate the billet drive gear bearing, clutch system friction discs, and the "all important" additional rear third bearing. The Superclutch shaft features (an R&D standard) oversized threads and a flanged nut proven in design to not fatigue or break under extreme conditions and allows charger impellor torque specs to be increased safely.

The R&D Superclutch drive gear is machined from billet steel alloy, heat treated for proper hardness, and the tooth profile is precision CNC ground to OEM Yamaha specifications. The clutch surfaces of the R&D gear features special "oil-holding" wiper slots that provide improved oiling to increase lubrication to the clutch discs. The R&D clutch discs are precision machined, heat treated, and ground to exact tolerance utilizing only the finest materials tested and proven to be the best in these type systems.

The R&D third bearing support design is integrated into a new back housing cover machined from billet aluminum with a creative precision alignment flange to insure 100% trueness and support to the third bearing. The third bearing assembly adds a tremendous amount of shaft support which will keep the shaft in line and free from the stresses of "gear climb". The third bearing assembly will also relieve stresses on the chargers main thrust system. For Periodic clutch maintenance and adjustments, R&D has made it easy. The clutch slip can be adjusted easily, and clutch discs inspected and or changed out without removing the shaft from the supercharger with the special tool kit provided with each system.

Minor machine work is required to the rear of the supercharger housing in order to achieve proper drive gear alignment (mating to the jack gear) and to true up the back cast surface so the third bearing housing cover mounts precision and true to the shaft centerline position. Machining is available from R&D, or your local machine shop can follow the kit supplied blue print.

Key Features Include:
- Precision one piece shaft design
- Billet drive gear with precision ground tooth profile to Yamaha Spec.
- Billet drive gear is precision oil sleeved (No needle bearings)
- Large turbo type compressor sized threads
- Unique clutch oiling system offers reduced clutch wear and galling prevention
- Rear (3RD) bearing support system offers precision centering and alignment
- Rear (3rd) bearing reduces front thrust stack stress and premature wear
- Easy maintenance and adjustments allowed with No Main shaft Disassembly
- Easy clutch adjustments and servicing with kit supplied tool kit

Description	Part No.
R&D Competition Clutch-Shaft	612-19200
R&D Clutch Disc Rebuild Kit	612-19201

*Available early summer 2012

R&D SUPERCHARGER CLUTCH REMOVAL TOOL

This R&D tool enables the clutch to be changed in a matter of only minutes. With the supercharger and front engine cover removed the tool drops down through the case and secures the drive gear at the front of the crankshaft from rotating when the clutch is removed and installed. This is a "must have" tool that will save massive amounts of time for any mechanic.

Description	Part No.
R&D Supercharger Clutch Removal Tool	612-92012

R&D FRONT COVER GASKET

R&D's new Front Cover Gasket features a metal reinforced center that enables it to be reusable when servicing the supercharger clutch.

Description	Part No.
R&D Front Cover Gasket	080-21024

R&D FX-SHO/FZR/FZS SILICONE INTAKE HOSE KIT

The R&D Yamaha FX-SHO/FZR/FZS Supercharger High Performance Hose Kit was developed while testing the R&D Monster Compressor Wheel Kits. Higher boost pressures create higher intake air temperatures of up to 235 degrees. The O.E.M. standard black rubber hose and standard hose clamps just do not hold up to the pressures and heat like high quality, high temperature silicone hose and high strength stainless steel T-bolt style hose clamps. The R&D "Blue Hose" is manufactured from high performance, turbo charger quality high-temperature silicone. The R&D silicone hose installs easily in place of the OEM rubber elbow hose, and T-bolt clamps will keep the hose secure for the longest of endurance races.

Description	Part No.
R&D FX-SHO/FZR/FZS Silicone Intake Hose Kit	612-18007

2012 IJSBA Hot Products Mark Hahn Memorial Havasu 300 Endurance Race in Lake Havasu City, Arizona Race Start!

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R&D/TIAL 50MM SURGE/BLOWOFF VALVE KIT

R&D announces the release of the new R&D/Tial 50mm Surge/Blow-off Valve Kit. R&D has been committed to on going research for any part that proves to be an aid in reducing the inherent and well known clutch issues related to running high performance boost wheels and high boost pressures in the Yamaha 1.8 Supercharged engine. R&D has noticed a significant reduction in clutch related issues in high boost ranges by "Going Big". R&D engineers have concluded through endurance testing that the new 50mm R&D/Tial Valve with its huge 50mm lightweight billet aluminum piston, and 4 massive (bigger than any other valve) pressure relief ports, to outperform the smaller (25-35mm) HKS Sequential, and 35mm Greddy RZ Valves. The trick R&D has found with this valve is, in aggressive off throttle situations with a gear driven supercharger the big Tial 50mm piston responds quickly to allow the reduction of boost pressure which relieves back pressure that can affect the clutch. The new 50mm design also has a much larger diaphragm over HKS and Greddy, which helps the piston react quicker to relieve pressure. If you are running Boost Wheels that produce over 15 pounds of boost, R&D strongly suggests looking into a larger valve setup. It only stands to reason that with higher boost pressures, a larger valve can allow quicker discharge of air volume. Valve kit comes complete with Aluminum weld-on adaptor, o-ring seal, billet Aluminum V-clamp, and banjo style vacuum fitting.

- Aggressive throttle response, increased horsepower from a better seal
- Increased boost pressures over smaller valves that don't seal well
- Improved valve action with larger diaphragm and variable spring control
- Improved clutch performance from reduced off throttle back pressures
- Precision sequential valve operation
- Installs easy and clean to the O.E.M. intercooler inlet/outlet
- Works well on R&D Pro Series Intercoolers

Description	Part No.
A. R&D/Tial 50mm BOV Valve Only	**613-95263**
B. R&D/Tial 50mm BOV Kit	**612-18009**

R&D FX-SHO/FZR SURGE PROTECTOR KIT

The R&D Yamaha FX-SHO/FZR Surge Protector Kit will significantly improve supercharger clutch and compressor wheel performance and reliability by eliminating damaging compressor surge. The R&D Surge Protection Kit utilizes an automotive vacuum assisted Bosch pressure blow off valve that releases the unwanted intake pressure between the throttle valve and the supercharger thus keeping the pressures in P1 and P2 equal. As soon as the throttle valve is opened, the blow off valve immediately closes and the compressor can supply its full boost potentials to the engine. The R&D surge hose is manufactured from high performance, high-temperature silicone with an integrated molded riser for the blow off valve to function without hindering intake flow or velocity. The R&D kit installs easily in place of the OEM rubber elbow joint with no modifications. The R&D Pressure Port installs between the MAP sensor and the MAP sensor bracket with a "bolt on" part. The R&D Surge Protection Kit is a necessary and cost effective upgrade for the Yamaha FX-SHO/FZR supercharged engine. The R&D kit comes completely assembled with silicone elbow, blow off valve, R&D B.O.V. filter, mounting hardware and instructions.

Description	Part No.
R&D FX-SHO/FZR Surge Protector Kit	**612-18008**

RIVA FX-SHO/FZR PERFORMANCE BLOW-OFF VALVE KIT

RIVA Performance Blow-off Valve Kit improves supercharger reliability and performance by relieving unwanted pressure during off-throttle operation. Reduces supercharger clutch & gear wear and eliminates heat soak in discharge tube. High-strength silicone hose with integrated HKS valve installs easily in place of OEM elbow joint. Includes high quality HKS Super SQV (Super Sequential Blow Off Valve) that features unique sequential valve structure and a differential pressure control system, allowing for a broad operation boost range. Also includes vacuum line and fittings necessary for installation on FX-SHO engine. A simple and cost effective upgrade for both stock and modified engines.

Description	Part No.
RIVA FX-SHO/FZR Performance Blow-off Valve Kit	**RY17040-BV**

RIVA FX-SHO/FZR BLOW-OFF VALVE KIT

High quality HKS Blow-off Valve reduces wear and tear on clutch & drive gears of supercharger and eliminates heat soak in discharge tube. For use with RIVA FX-SHO/FZR Power Cooler (part# RY17040-PC). HKS Super SQV (Super Sequential Blow Off Valve) features unique sequential valve structure and a differential pressure control system, allowing for a broad operation boost range. Includes vacuum line and specific fittings necessary for installation.

Description	Part No.
RIVA FX-SHO/FZR Blow-Off Valve Kit	**RY17040-BOV-SSQV**

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R&D FX-SHO/FZR STAGE 1 INTERCOOLER CORE KIT

The R&D Yamaha FX SHO/FZR Stage 1 Intercooler Core Kit was developed to replace the over restrictive OEM intercooler with an inexpensive direct replacement core that will bolt in to the OEM stock location with all stock hardware. The R&D Intercooler Core reduces the deadhead air restriction (similar to the R&D Intake Core Kit) that is created when installing a C1 Monster compressor wheel with a 3-4 pound boost pressure gain. The R&D Intercooler offers better cooling efficiency with an aluminum 8 core design.

- Flows 40 CFM more than stock
- Improves cooling efficiency
- 3 pounds lighter than stock
- Bolts directly into stock location
- Increases horsepower by reducing restrictions
- Works great with C1 compressor wheel
- Retains O.E.M. flushing system for maintenance

Description	Part No.
R&D FX-SHO/FZR/FZS Stage 1 Intercooler Core Kit	612-18001

IWCS

INTERCOOLER/SUPERCHARGER LUBRICATION KIT

This kit will allow you to spray a aerosol lubricant of your choice into the supercharger, intercooler and throttle body to prevent rust from the excess moisture in the system. Complete instructions, pictures and a diagram supplied for a simple installation.

Description	Part No.
Yamaha/Sea Doo Spray Nozzle Inlet for Lubrication	IWCS-SSU

R&D YAMAHA FX-SHO/FZR PRO LIMITED INTERCOOLER KIT

The R&D Yamaha FX-SHO/FZ/FZR Pro Limited Intercooler Kit was developed to directly replace the restrictive O.E.M. intercooler. The new R&D design offers high performance affordable intercooling that will bolt into the OEM stock location utilizing the OEM inlet cover, and all stock hoses and hardware.

The new R&D design is IJSBA & APBA Limited Class legal, complying with rule book regulating aftermarket intercooler size. The R&D Intercooler has been specifically designed, sized, and routed to also comply with the I.J.S.B.A.'s 25% rule. The Intercooler Kit is constructed from aircraft aluminum and is extremely easy to install, removes quick for cleaning and winter storage, is ultra strong, and rubber mounted so vibration will not compromise the long term performance. The R&D intercooler offers better cooling efficiency through a aluminum core design that easily out performs cheaper inefficient intercooler cores known to crack, leak and cause extreme detonation. The R&D intercooler core will flow more air, deliver better cooling efficiency, and allow C1 and C3 Monster Wheel to live up to their airflow volume and power potential. The new R&D design drastically reduces deadhead air restriction producing ultra responsive "POWER NOW" acceleration all the way through the RPM range.

The R&D Pro Limited Intercooler Kit has also incorporated an integral flange which will allow the easy bolt on addition of a Greddy RZ Blow-off valve which can be adjusted to regulate boost, and compressor surge blow-off under deceleration.

* Significantly improves cooling efficiency
* Flows 40 CFM more than stock
* Bolts directly into stock location w/oem hardware
* Increases overall horsepower
* Aggressive holeshot and mid range acceleration
* Works great with C1 or C3 Monster compressor wheels
* Retains O.E.M. flushing system for maintenance
* I.J.S.B.A. and A.P.B.A. Limited Class Legal (Rule 7.8.3.)

*7.8.3 AIR/FUEL DELIVERY — FOUR-STROKE (RUNABOUTS ONLY) Turbocharger impeller or supercharger impeller may be modified or aftermarket. The impeller housing must remain stock as supplied by the manufacturer. Intercoolers may be modified or aftermarket. Intercooler heat exchange surface area may not be increased by more than 25%.

Description	Part No.
R&D Yamaha SHO/FZ/FZR Pro Limited Intercooler Kit	612-18004

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R&D PRO SERIES RACING INTERCOOLER KIT

The "All New" R&D Yamaha SHO/FZ/FZR Pro Series Racing Intercooler Kit was developed starting with a clean sheet of paper and several key factors in mind. We wanted to build an intercooler system that offered the easiest of installation, easiest to maintain, looks like an indy car part, keeps the air cooler than it looks, and most importantly, be non restrictive to allow maximum CFM airflow for maximum horsepower.

The new R&D Pro Series Racing Intercooler Kit is constructed from aircraft aluminum and is extremely easy to install, removes quick for cleaning and winter storage, is ultra strong, and rubber mounted so vibration will not compromise the long term performance.

This new intercooler system has been tested against every manufacturer's current intercooler designs, and has proven to out flow, out cool, and out perform them all. The R&D intercooler offers better cooling efficiency through its "made in the USA" aluminum core design that easily out performs cheaper inefficient intercooler cores known to crack, leak and cause extreme detonation. The R&D Pro Series intercooler core will flow more air, deliver better cooling efficiency, and allow C1-C24X Monster Wheels to live up to their airflow volume and power potential.

Tested to easily allow 30 PSI of boost @ 90-100 degree air temp, the new R&D Pro Series Racing Intercooler design drastically reduces deadhead air restriction producing ultra responsive "POWER NOW" acceleration all the way through the RPM range. All data and air temp was logged with a MoTeC M400 with i2 logging software. It should be noted that pressure data was taken in the plenum with the stock MAP sensor and backed up with a mechanical gauge.

The R&D Pro Series Racing Intercooler Kit also has an incorporated integral flange which will allow the bolt on addition of an R&D/Tail Q Series 50mm Blow-off valve (Pt. # 613-95263 sold separately) which superbly regulates compressor surge or blow-off under deceleration.

- Significantly improves cooling efficiency
- Flows 90-100 CFM more than stock (allows 60 pounds of unrestricted air)
- Bolts directly into stock air box location w/O.E.M. studs and rubber grommet hardware
- Increases overall horsepower (core size/area allows up to 600 horsepower)
- Aggressive holeshot and mid range acceleration
- Works great with any R&D Monster compressor wheels
- Retains O.E.M. flushing system for maintenance
- I.J.S.B.A. and A.P.B.A. Limited Class and Pro Open Legal

Description	Part No.
R&D Pro Series Racing Intercooler Kit	**612-18005**

RIVA 'GEN-2' POWER COOLER KIT

The RIVA 'GEN-2' Power Cooler intercooler system features a new high-capacity cooler element that is rated for up to 500hp! Huge cooler core resists heat soak under the most demanding high boost/high temperature applications. Delivers an increase of 20 peak horsepower over OEM intercooler providing arm-wrenching results on the water. Quality manufacturing of cooler core delivers minimal pressure drops and excellent thermal efficiency. The cooling element is dramatically more efficient than the stock unit with exit temperatures averaging 60°F cooler than stock. This delivers cooler, denser air for increased performance throughout the RPM range. Innovative design allows easy disassembly of cooler element & ducting for maintenance and cleaning. Features integrated blow-off valve mount that will accept RIVA/HKS Blow-Off Valve kit (sold separately) for improved supercharger reliability and performance. Power Cooler installs securely with shock absorbing rubber mounting system and stainless steel hardware. Kit contains all necessary hardware and detailed installation instructions.

Description	Part No.
RIVA 'Gen-2' Power Cooler Kit FX-SHO/FZ	**RY17040-PC-1**

2012 IJSBA Hot Products Mark Hahn Memorial Havasu 300 Endurance Race in Lake Havasu City, Arizona

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R&D FX-SHO/FZR/FZS INTERCOOLER COOLING KIT

The R&D Yamaha FX-SHO/FZR/FZS Intercooler Temperature Control system was developed to offer an inexpensive complete bolt on kit that will allow the full performance and cooling potential the O.E.M. intercooler has to offer for recreational applications. Intercooler core water temperatures have a range of affect on the supercharged air temperatures that enter into the engine. The Yamaha SHO Intercooler operates on a single low pressure (10 P.S.I.) line of lake temperature water to cool the intercooler. R&D has found that by adding an additional intercooler water in line, and adding an additional water out line and bypass fitting, there will be double the water flow volume at 20 P.S.I. Reduced intercooler core temperatures can add a noticeable increase in low end and midrange power along with reduced detonation. R&D offers a range of machined flow control fittings to allow water volume control tuning for intercooler temperature adjustments for warm lake water and extreme hot air conditions. R&D also offers a pressure relief blowoff valve kit for high water volume flow rates on higher boost Stage 1 and up engine kits. The R&D Kit will allow temperature tuning that will deliver surprising results. Unlock hidden performance and power potential in the OEM stock intercooler or aftermarket intercooler system by reducing intercooler core temperatures.

- More horsepower with cooler intake air temperatures
- Increased acceleration and mid range performance
- Reduces detonation in hot weather conditions
- Temperature control tuneability
- An inexpensive recreational performance addition
- Pressure relief valve options
- Easy installation instruction

Description	Part No.
R&D FX-SHO/FZR/FZS Intercooler Cooling Kit	660-18000

R&D FX-SHO/FZR/FZS INTERCOOLER TEMPERATURE CONTROL PRESSURE RELIEF VALVE KIT

R&D also offers a pressure relief blowoff valve kit for high water volume flow rates on higher boost Stage 1 and up engine kits. The R&D kit will allow temperature tuning that will deliver surprising results. Unlock hidden performance and power potential in the OEM stock intercooler or aftermarket intercooler system by reducing intercooler core temperatures.

Description	Part No.
R&D FX-SHO/FZR/FZS Intercooler Temperature Control Pressure Relief Valve Kit	660-82511

R&D YAMAHA FX-SHO/FZR ENGINE INTERCOOLER COOLING KIT

The R&D Yamaha FX-SHO/FZR Engine/Intercooler Cooling Kit was developed for high performance recreational and racing use. Extensive engine cooling and inlet air temperature testing using both MoTeC I2 and Innovate digital logging systems has proven the R&D High Performance Cooling Kit to offer double the water volume flow through the engine, oil cooler, and intercooler as well as increase water pressure. The O.E.M. cooling system has a very low water pressure (10 P.S.I. at 7600 rpm's) and a low water volume flow. The new R&D kit will double the water volume which will lower intake air temperature by 15-20 degrees as well as lower engine block and head temperatures by 40-50 degrees. The additional oil cooler water line will lower engine oil temperatures by 15-20 degrees promoting better lubrication and increased engine cooling. The R&D Cooling Kit arrives 100 percent complete with pre-cut hoses, "T" connectors, dual line pump block, through hull bulkhead fittings, hose clamps, water by-pass fittings, the thermostat removal sealing washer, and detailed instructions with pictures. R&D recommends the cooling system to be upgraded as a stand alone performance upgrade and a must have kit addition when installing power adders such as R&D Supercharger Wheels, Engine Performance Parts, and Engine Management Kit parts. Cooler engine, inlet air, and oil temperatures produce higher horsepower with decrease detonation

*Better throttle response, increased horsepower
*Cooler header and under seat temperatures
*Increased power with cooler air inlet temperatures
*Cooler cylinder and cylinder head will reduce knock
*Cooler oil will lubricate better and last longer
*Increased engine protection
*Improved clutch performance with cooler oil

Description	Part No.
R&D SHO/FZR Engine/Intercooler Cooling Kit	660-18001

RIVA ENGINE BREATHER UPGRADE KIT

Easy to install Engine Breather Upgrade Kit eliminates power-robbing crankcase emissions from your engine's air intake. Increases horsepower by removing the engine's requirement to burn relatively non-combustible oil. Also improves intercooler efficiency by preventing the oil sludge coating that lowers thermal efficiency. Easy installation retains highly efficient OEM air/oil separator system. Kit includes pre-formed hose with attached K&N filter along with all necessary hardware & instructions.

Description	Part No.
RIVA Engine Breather Upgrade Kit	RY19040-EBUK

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RIVA FX-SHO/FZR STOCK INTERCOOLER UPGRADE KIT

The RIVA Intercooler Upgrade Kit delivers a huge performance gain to your stock intercooler system. The cost efficient upgrade kit features billet aluminum spacers that increase the end tank capacity and water flow in and out of the OEM intercooler.

Key Benefits Include:
- Intercooler exit temps average 30-degrees cooler than stock.
- Increased horsepower with cooler, denser air temps.
- No drilling or machining required to OEM intercooler.
- Includes billet "high-flow" pump strainer providing a second dedicated waterline to intercooler.
- Replaceable sacrificial zinc anode protects cooling system from corrosion.
- IJSBA/ABPBA Stock Class Legal.

Description	Part No.
RIVA FX-SHO/FZR Stock Intercooler Upgrade Kit	**RY17040-ICUK**

RY10040-ECUK-1

RY10040-ECUK-PC

RIVA FX-SHO/FZ ENGINE COOLING UPGRADE KITS

The RIVA Engine Cooling Upgrade Kit delivers dramatically improved cooling efficiency to engine and oil cooler for increased reliability & performance. Greatly enhances water flow & pressure by replacing restrictive OEM water fittings with high-flow billet fittings and superior routing. Allows the addition of aftermarket ECU's, high-boost compressor wheels and other performance modifications that can increase heat & detonation. Includes all necessary water lines, hardware, fittings and detailed installation instructions.

Fits 2009-10 FX-SHO & FZ models.

Description	Part No.
FX-SHO/FZ Engine Cooling Upgrade Kit For use with the OEM Intercooler Upgrade Kit	**RY10040-ECUK-1**
FX-SHO/FZ Engine Cooling Upgrade Kit For use with the RIVA Power Cooler Kit	**RY10040-ECUK-PC**

ENGINE BLOCK THERMOSTAT KIT COOLING OPTION

The R&D Block Thermostat Kit Option was developed to offer a way to run "Dual Thermostats" to the engines cooling system to control and allow warm up and pre heat cycles to take place. Engine Block and Head cooling on the Yamaha Engine becomes difficult when running high compression ratios, higher boost levels, and aggressively advanced ignition timing. R&D has found that multiple cooling lines need to be added to the cooling system to provide enough volume to keep temperatures stable and in check. The problem is the Single OEM thermostat is too restrictive and doesn't allow enough water volume flow to reduce temperatures with the added cooling lines. R&D has found a way to add an additional thermostat that allows enough water flow volume to cool the engine and head and retain the O.E.M. method for engine pre heat or warm up. The R&D Kit installs as a bolt on kit directly in place of the corrosion anode. Running two thermostats allows enough water flow to cool the engine properly. The R&D thermostat kit option will start to open at 120 degrees, and will allow full flow at 140 degrees. The O.E.M. stock thermostat opens at 118-126 degrees and allows full flow at 140 degrees. Having two thermostats installed that are full open at 140 degrees, and flow enough water volume, will help to keep engine block temperatures to between an ideal 150-175 degrees. R&D has done extensive testing with the engineers at MoTeC both on the Dyno and on the water to determine that 150-160 degrees block temperatures is where the most peak power is, any hotter and power diminishes. The R&D dual thermostat kit will be a must have addition where engines are being run in extreme cold water and weather conditions. There has been many debates over these theories, and until now there has been no way around extended warm up cycles to bring engine temps up before high engine loads can be applied. R&D has found a way to end the debate and give everyone what they are looking for in a complete cooling system.

Description	Part No.
SHO/FZR/FZS/VXR/VXS	**660-18004**

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RIVA REAR EXHAUST KIT

RIVA Racing Rear Exhaust Kit delivers performance and cutting-edge style. Allows for removal of restrictive sound suppression system located between waterbox and hull exit. Improves engine performance by reducing back pressure and restriction. Includes mandrel bent aluminum exhaust tube that is powder coated to prevent corrosion, large billet through-hull exhaust outlet, billet OEM exhaust outlet block-off and high-temp silicone couplers along with all necessary mounting hardware & installation.

Description	Part No.
RIVA Racing FZR/FZS Rear Exhaust Kit	RY15050
RIVA Racing FX-SHO Rear Exhaust Kit	RY15040
RIVA Racing VXR/VXS Rear Exhaust Kit	RY15060

RIVA FX SHO/FZR FREE FLOW EXHAUST KIT

Replaces the restrictive sound suppression system located between the water box and hull exit on your watercraft. Improves engine performance by reducing back pressure and harmful detonation. Includes mandrel bent aluminum tubing that is powder coated to prevent corrosion, high-temp silicone replacement coupler and installation instructions.

Description	Part No.
RIVA FX-SHO/FZR/FZS Free Flow Exhaust Kit	RY16040

R&D FX-SHO/FZR/FZS HIGH FLOW EXHAUST KIT

The R&D SHO High Flow Exhaust Kit will add a noticeable low end and mid range power feel as well as add top end performance! The R&D High Flow Exhaust Kit will add a great performance sound to the SHO while maintaining a safe and under IJSBA and Coast Guard approved 86 db!

Description	Part No.
A. RIVA FX-SHO/FZR/FZS High Flow Exhaust Kit	332-18000
B. RIVA VXR/VXS Free Flow Exhaust Kit	RY16060

BILLET EXHAUST OUTLET

The new R&D Billet Exhaust Outlet.

Description	Part No.
R&D 3" Diameter Billet Exhaust Outlet	331-30000
R&D 2.75" Diameter Billet Exhaust Outlet	331-32750

R&D HIGH TEMPERATURE SILICONE COUPLINGS

Description	Part No.
3" - 3" High Temp Silicone Couplings	061-30030
3" - 2" Reducer High Temp Silicone Couplings	061-32500
2.75" - 2.5" Reducer High Temp Silicone Couplings	061-32501
3" - 2.75" Reducer High Temp Silicone Couplings	061-32750

EXHAUST RESONATOR REMOVAL KIT

The R&D Exhaust Resonator Removal Kit will allow the sound suppression ball to be removed and plugged. When removing the exhaust sound suppression ball and modifying the exhaust hose, low end response is gained and trapped hot exhaust gases can be evacuated quicker through less restriction or back pressure.

Description	Part No.
R&D VXR/VXS Exhaust Resonator Removal Kit	332-18005

RIVA FX-SHO/FZ PRO-SERIES WATER BOX

Developed on RIVA's Dyno and tested extensively on the water, this water box features radiused exhaust tubes and end caps for optimum exhaust flow. Unique exhaust baffle will increase the low-end power and mid-range pull of your Yamaha watercraft. Delivers up to 15hp on modified engines along with significant torque gains. High-strength aluminum construction will survive backfires and meltdowns. Powder coated to prevent corrosion.
A must for modified motors.

Key Features:
- Delivers up to 15hp on modified craft!
- Machined hose flanges for reliable coupler retention.
- Radiused exhaust tubes & end caps.
- Powder coated to prevent corrosion.

Description	Part No.
RIVA FX-SHO/FZ Pro Series Water Box	RY16041

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R&D FX-SHO/FZR/FZS/VXR/VXS FUEL PRESSURE REGULATOR KIT

R&D offers a Yamaha FX-SHO/FZR/FZS model specific fuel pressure regulator system allowing custom fuel pressure tuning to the EFI fuel systems fuel pressures. The R&D Fuel Pressure Regulator System offers a wide range of setup possibilities. Base fuel pressure is adjustable from 5 to 60 PSI. The R&D fuel pressure regulator can also be set up to allow "rising rate" fuel pressure at a 1 to 1 ratio (One pound of fuel pressure gain over base for every pound of boost gain). R&D offers two types of fuel pressure regulator set ups. Part #802-00080 will come completely assembled and ready to install. The R&D Pro System is 100 percent complete, installs directly to the top of the fuel tank, and connects directly to the fuel rail with OEM security lock connectors with no modifications. For the R&D Fuel Pressure Regulator only use part #801-25010, which comes complete with 90 degree barbed brass fittings for use with push on type hose and Oetiker style clamps for security. R&D offers high performance fuel hose that can be purchased by the foot, as well as the Oetiker style clamps. The R&D bypass style regulator system is capable of handling any fuel pump up to 250 GPH. Replace "Deadhead" regulator performance and experience the full flow volume and rock steady fuel pressure that only a dynamic R&D fuel pressure regulator kit can produce.

- Fuel pressure will rise on a 1:1 ratio when boost referenced
- All ports are 3/8" NPT, with one inlet, 3 outlets, and one return port on the bottom
- Beautiful type II bright dip anodized finish
- Bypass design produces the ultimate, dynamic fuel delivery system
- 3/8" pipe tapped for standard or AN fitting ready
- R&D offers pre-assembled #4 AN hose to finish off a return system
- R&D offers fuel hose by the foot for custom routing

Description	Part No.
R&D FX-SHO/FZR/FZS/VXR/VXS Fuel Pressure Regulator Kit (Shown above)	802-00080
R&D Fuel Pressure Regulator *(Fittings not included)*	801-25010

R&D-FX SHO/FZR/VXR/VXS IN-TANK FUEL PRESSURE REGULATOR BLOCK OFF KIT

R&D offers a Fuel Pressure Regulator Block off Kit which will allow the OEM stock in tank fuel pressure regulator to be removed, blocked off, and replaced with a billet part which is mandatory when installing an aftermarket externally adjustable fuel pressure regulator system. The OEM in tank fuel pressure regulator is fixed to maintain 40-43 pounds of fuel pressure at all times. For high performance applications where horsepower is boosted, it is necessary to install larger flowing fuel injectors and be able to tune the fuel pressure up or down as needed. Most factory race teams are running 65 plus pounds of fuel pressure along with higher flowing fuel injectors and externally adjustable pressure regulators. The R&D has a complete line up of fuel pumps, fuel injectors, fuel pressure regulators, fuel gauge, and fuel hose accessories all designed specifically for the Yamaha SHO. All R&D fuel injection parts and products meet Coast Guard, I.J.S.B.A., and APBA approval.

Description	Part No.
R&D FX-SHO/FZR/FZS/VXR/VXS In-Tank Fuel Pressure Regulator Block Off Kit	812-35257

RIVA FX-SHO/FZ RISING RATE FUEL PRESSURE REGULATOR KIT

RIVA Fuel Pressure Regulator Kit provides the precision pressure control necessary to compliment aftermarket ECU applications on the 'SHO' engine. Kit is fully assembled & mounts securely on top of fuel tank via sturdy aluminum bracket. High quality billet pressure regulator can adjust base pressure from 25 to 80 PSI. Unit can also be set up as rising rate fuel pressure regulator at a 1 to 1 ratio providing one additional pound of fuel pressure for every pound of boost gain. Plugs directly into original fuel system with OEM connectors and features a large 3/8" fuel return line that is routed through supplied rubber fuel tank cap. Includes integrated liquid-filled pressure gauge and billet Fuel Pressure Regulator Block-Off necessary for removal of stock fuel pressure regulator in fuel tank.

Key Features Include:

- Precision fuel pressure control with optional rising rate function.
- High quality stainless steel liquid-filled pressure gage.
- Large 3/8" fuel return line.
- Includes billet Fuel Pressure Regulator Block-Off.
- Easy bolt-on installation with OEM fuel connectors.
- Includes complete installation instructions & tuning guide.

Fits Yamaha FX-SHO, FZR & FZS models.

Description	Part No.
RIVA Fuel Pressure Regulator Kit	RY12040-RRFPR-6S5

R&D INLINE FUEL PRESSURE GAUGE ADAPTER

The R&D Fuel Pressure Gauge Adapter Tool is designed to be a plug in fuel pressure gauge that needs no modifications to install and use. Simply disconnect the OEM locking fuel connector from the fuel rail and plug the gauge tool directly into the connector. Plug the locking connector supplied on the R&D tool onto the fuel rail and lock. Use the tool to verify fuel pressure and fuel pump condition. Use the tool to set and verify base fuel pressure settings on the R&D Rising Rate Fuel Pressure Regulator (RRFPR). When finished, disconnect the tool and reconnect the stock fuel line. The Adapter installs inline between the OEM fuel rail and the R&D RRFPR via the OEM connectors for easy connect and disconnect. The R&D Tool works on both Yamaha and Kawasaki fuel systems. Installation time is only 2 minutes. Liquid filled fuel pressure gauge sold separately.

Description	Part No.
R&D Inline Fuel Pressure Gauge Adapter	612-00081
R&D Liquid Filled Fuel Pressure Gauge	900-02180

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RIVA FX-SHO/FZ BOOST CLAMP

RIVA's Boost Clamp will allow you to run up to 17psi of boost pressure in your Yamaha SHO engine when used with RIVA Fuel Pressure Regulator Kit and stock ECU. Device controls communication between stock MAP sensor and stock ECU to allow for higher boost levels and more power. The Boost Clamp is an integral part of RIVA Stage 2 SHO Engine Kit producing 260hp when combined with our recommended components. Installs quickly & easily with integrated waterproof connectors.

Description	Part No.
RIVA FX-SHO and FZ Boost Clamp	RY11740-BC-6S5

R&D 2011 FZR MULTI-PRESSURE PORT BOOST GUAGE SURGE - RRFPR ADAPTOR KIT

The R&D Yamaha FZR/SHO Multi-Pressure Port Adaptor Kit will allow quick and easy hook up of a manual boost gauge, surge valve, and a raising rate fuel pressure regulator. The R&D Pressure Port Adaptor installs in the MAP sensor hose and has 3 ports that allow for the operation of a vacuum/boost gauge, check plenum air temperatures, operate a surge protection valve, and operate a boost referenced fuel pressure regulator (RRFRP), or any three of these applications at the same time with one simple part. The R&D Pressure Port Adaptor Kit comes complete with 12" of vacuum hose, multi-line fitting, 2 tube covers, nylon cable ties and instructions.

Description	Part No.
R&D 2011 FZR Multi-Pressure Port Boost Gauge Surge - RRFPR Adaptor Kit	612-92006

R&D FX-SHO/FZR/FZS MULTI-PRESSURE PORT BOOST GAUGE/SURGE/RRFPS ADAPTER KIT

The R&D Yamaha FX-SHO/FZR/FZS Multi-Pressure Port Adapter Kit will allow quick and easy hook up of digital or manual boost gauges with the R&D Multi-port billet Adapter. The R&D Pressure Port Adapter installs between the MAP sensor and the MAP sensor bracket as a "bolt on" part no with modifications. Operate a vacuum/boost gauge, check plenum air temperatures, and operate a surge protection valve at the same time, or run a boost gauge, surge protection device, and operate a boost referenced fuel pressure regulator (RRFPR) at the same time with one simple part. The R&D Pressure Port Adapter Kit comes complete with longer MAP sensor mounting screws, o-ring seals, nylon cable ties, all mounting hardware and instruction.

Description	Part No.
R&D FX-SHO/FZR/FZS Multi-Pressure Port Boost Gauge/Surge/RRFPS Adapter Kit	612-92005

RIVA/HKS FX-SHO/FZ HIGH VOLUME FUEL PUMP

This is a direct replacement high volume fuel pump for high performance applications. Delivers 265LPH to support highly modified engine packages. Easy installation requires no modifications. Includes detailed installation instructions.

Description	Part No.
RIVA/HKS FX-SHO High Volume Fuel Pump	RY12040-265FP-6S5

R&D FX-SHO/FZR/FZS/VXR/VXS HIGH PERFORMANCE HIGH VOLUME FUEL PUMP KITS

R&D Performance carries a complete line up of high performance replacement fuel pumps that are machined specifically to fit the Yamaha FX-SHO/FZR/FZS fuel pump housing and are offered in a variety of flow ratings to facilitate from basic low cost replacement to an all out 500 H.P. race machine. All R&D FX-SHO/FZR/FZS fuel pumps have been precision flow rate tested and charted in (LPH) liters per hour. R&D FX-SHO/FZR/FZS fuel pumps arrive complete with Yamaha FX-SHO/FZR/FZS model specific installation instructions complete with detailed photos that will help make the fuel pump installation quick and easy.

NOTE: There are no modifications necessary to install the R&D fuel pump therefore switching back to the O.E.M. fuel pump assembly is quick and easy as well.

Description	Part No.
R&D FX-SHO/FZR/FZS/VXR/VXS 190 LPH OEM Replacement Fuel Pump Kit	812-35190
R&D FX-SHO/FZR/FZS/VXR/VXS 255 LPH Low Pressure Fuel Pump Kit	812-35255
R&D FX-SHO/FZR/FZS/VXR/VXS 255 LPH High Pressure Fuel Pump Kit	812-35256

R&D #4 & #6 FUEL RETURN LINE KIT

R&D has developed a two larger fuel return line kits for the FX-SHO/FZR/FZS. Increasing the diameter of the fuel return line to #4 or #6, decreases line pressure and increases fuel volume, yielding increased tuning ability in high heat and higher performance applications.

Description	Part No.
R&D #4 Fuel Return Line	612-00082
R&D #6 Fuel Return Line	612-00083

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FX-SHO/FZ/VXR/VXS 725 CC/1000 CC PRO SERIES FUEL INJECTOR KIT

R&D Pro Series injectors offer increased fuel delivery over our 525cc injectors. The new Pro Series injectors are offered in 725cc and 1000cc flow rates. Each set of injectors have been flow rate and voltage comp tested to insure linear accuracy and are shipped with a precision dead time (voltage compensation) chart that can be added into your aftermarket ECU's software program under battery compensations. R&D Pro Series injectors offer perfectly clean linear response performance from low idle all the way through the entire power range. R&D has flow rate tested the O.E.M. Yamaha FX HO injectors and verified them to flow 396 cc at 43 PSI of fuel pressure, which rates them to flow 39 pounds of fuel per hour. The R&D Pro Series Fuel Injectors have been precision flow rate tested to 725cc at 43 PSI of fuel pressure, and 925cc at 70 PSI of fuel pressure, which rates them to flow as much as 92 pounds of fuel per hour. R&D fuel injectors perform excellent, delivering precise fuel flow at fuel pressure ratings ranging from 40 to 80 PSI. Each R&D injector set is packaged complete with all installation hardware, necessary harness interface connectors, voltage compensation chart, and instructions.

Description	Part No.
R&D Pro-Series 725cc Injectors (set of 4)	812-18001
Flow Rate: 725cc at 43.5 Pounds of Pressure =72 Pounds Per Fuel Hour Fuel Flow.	
Flow Rate: 925cc at 70.0 Pounds of Pressure =92 Pounds Per Fuel Hour Fuel Flow.	
R&D Pro-Series 1000cc Injectors (set of 4)	812-18002
Flow Rate: 1000cc at 43.5 Pounds of Pressure =100 Pounds Per Fuel Hour Fuel Flow.	
Flow Rate: 1225cc at 70.0 Pounds of Pressure =120 Pounds Per Fuel Hour Fuel Flow.	

R&D FX-SHO/FZR/FZS O2 SENSOR MOUNT KIT

The new R&D O2 sensor mount kit makes installing an AFR gauge a breeze on the Yamaha FX-SHO, FZR, FZS, FX140, HO, GPR, and VX110. It simply replaces the OEM plug and installs directly into the OEM pipe without any modifications. Kit comes complete with installation tool. AFR gauge sold separately.

Description	Part No.
FX-SHO/FZR/FZS/FX140/HO/GPR/VX110/VXR/VXS O2 Sensor Mount Kit	332-18010

R&D O2 SENSOR WRENCH

The R&D O2 Sensor wrench is custom designed with crows feet ends to allow easy installation or removal of the Oxygen sensor.

Description	Part No.
R&D O2 Sensor Wrench	332-18011

RIVA PRO-SERIES YAMAHA FUEL INJECTORS

Our high impedance fuel injector kit delivers additional fuel to modified engines for high boost applications. 100lb (1,000cc) injectors are for use with aftermarket ECU (RY11840-01-C) for correct calibration. Kit includes injectors, plug and play adapters, fuel rail spacers and detailed installation instructions. Fits 2009-12 FX-SHO & FZ models.

Description	Part No.
RIVA Pro-Series Yamaha Fuel Injectors	RY12040-I-KIT-100

RIVA FX SHO/FZ 3 BAR MAP SENSOR KIT

Do you plan on running over 14.7psi of boost? If so, our 3 Bar MAP Sensor Kit is essential for accurate engine management with high boost applications. High quality 3 Bar MAP Sensor will measure up to 29.7psi, where the OEM 2 Bar MAP Sensor will only measure up to 14.7psi. It is critical to provide accurate pressure information to your aftermarket ECU to ensure proper air/fuel mixture and data logging. RIVA 3 Bar MAP Sensor mounts directly in place of OEM sensor with stainless bracket and plugs directly into OEM wiring harness.

Description	Part No.
RIVA FX-SHO/FZ 3 Bar Map Sensor Kit	RY11740-MS-3

2012 IJSBA Hot Products Mark Hahn Memorial Havasu 300 Endurance Race in Lake Havasu City, Arizona

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FX-SHO/FZR HIGH PERFORMANCE R&D ECU REPROGRAMMING SERVICES

DOLLAR FOR DOLLAR UNBEATABLE PERFORMANCE: R&D is proud to announce our new line up of Yamaha FZR and SHO ECU reprogramming services. The engineering staff at R&D have been testing and developing ECU programs to allow new performance levels to be reached for recreational enthusiasts and racers who are interested in more performance through reprogrammed the OEM ECU. Entry level programs will allow the enjoyment of a raised RPM limit settings, advanced ignition timing, re-calibrated fuel map, as well as the internal boost limiter raised to allow R&D Monster Wheels to work to full potentials. There are several performance levels to choose from that work with stock or R&D C1, C3, and C5 Monster Wheels or any wheel kit rated up to 18 pounds of boost. Programs offered are recreational performance tuned with safe AFR values, and can be further custom tuned (Richened) to accommodate additional boost levels. Existing customers who have purchased an R&D Powershot Fuel Control Unit can send their units in to R&D for free upgraded re-programming to allow custom fuel tuning to work with the new ECU Programs. R&D Powershot Fuel Control Units are not required on entry recreational level (R1, R2, or R3) programs using stock, C1, or C3 Wheels. However, custom fuel tuning with the Powershot Fuel Tuner can be an add-on or additional upgrade that is suggested for higher performance applications such as C5 Monster Wheel Kits. Fuel tuning or AFR conditions should always be checked and verified as values will always be slightly different from one engine set up to another. Higher performing programs are continuously under development and will be announced through updates on the R&D website, so stay tuned. Custom program files can also be performed to accommodate just about any combination of performance level or type of fuel being used. R&D strongly suggests that AFR tuning be periodically verified using Innovate Products LM1 or LC1 Logging Kit also available from R&D.

Part #802-01801 R&D R1 ECU; Reprogrammed ECU to allow up to 8450 RPM's, Raised Boost limiter to allow up to 18 pounds boost, and upgraded ignition timing safe for all recreational and offshore racing use. R1 works great with stock, C1, C3, or C5 Monster Wheel Kits, or any wheel kit rated up to 18 pounds of boost. 89 octane safe with stock and C1 wheels, 91 octane pump fuel use is recommended for C3 and C5. The R1 program file does not require a Powershot Fuel Tuner for use with C1 and C3 Monster Wheels.

Part #802-01802 R&D R2 ECU; Reprogrammed ECU to allow 8750 RPM's, Raised Boost limiter to 17 pounds, advanced ignition timing for high performance recreational use. R2 works great with stock, C1, C3, or C5 Monster Wheel Kits, or any wheel kit rated up to 18 pounds of boost. 91 octane pump fuel should be used with R2 reprogram. 93-95 octane fuel is recommended for closed course racing conditions where high engine loads are present. The R2 program file does not require a Powershot Fuel Tuner for use with C1 and C3 Monster Wheels.

Part #802-01803 R&D R3 ECU; Reprogrammed ECU to allow 8850 RPM's, eliminated Boost limiter, aggressively advanced ignition timing in the low end areas and softer high rpm settings in the peak boost areas for high performance recreational use. R3 works great with C1, C3, or C5 Monster Wheel Kits, or any wheel kit rated up to 18 pounds of boost. 91-93 octane pump fuel should be used with R3 reprogram with O.E.M. 8.6-1 pistons and cams. R&D suggests 100 plus octane fuel when using 9.5-1 pistons, RC1 Cams, and R&D Pro Tune Adjustable Cam Gear Kits. NOTE: The R3 program file does not require a Powershot Fuel Tuner for use with C1 and C3 Monster Wheels. Use the Powershot for custom fuel tuning with C5 wheel kits. NOTE: The R&D RRFPR Kit is required when using the R&D C5 Monster Wheel Kit.

Part #802-01803V R&D R3 VF ECU; Reprogrammed ECU allows the use of variable fuels. Run 91 octane at 12-13 pounds (180 kpa) of peak boost, and run 98 or 100LL Aviation fuel when boost pressure is adjusted to 15-18 pounds. The program allows 8850 RPM's, eliminated Boost limiter, aggressively advanced ignition timing in the low end areas and softer high rpm settings in the peak boost areas for high performance recreational use. R3 VF works great with C1, C3, or C5 Monster Wheel Kits, or any wheel kit rated up to 18 pounds of boost. 91-93 octane pump fuel should be used with R3 VF reprogram with O.E.M. 8.6-1 pistons and cams at 12-13 pounds. R&D suggests 100 plus octane fuel when using 9.5-1 pistons, RC1 Cams, and R&D Pro Tune Adjustable Cam Gear Kits. NOTE: The R3 VF program file does not require a Powershot Fuel Tuner for use with C1 and C3 Monster Wheels. Use the Powershot for custom fuel tuning with C5 wheel kits. NOTE: The R&D RRFPR Kit is required when using the R&D C5 Monster Wheel Kit. NOTE: Adjusting the peak boost pressure is done via the R&D/GReddy adjustable boost level/surge protection valve. The R3 VF Program allows the recreational rider/racer the flexibility to race on Sunday with 15-18 pounds of boost and aggressive timing with 100 octane Aviation fuel, and still be able to take the family out for weekend fun with 91 octane pump gas when boost is adjusted back to 10-13 pounds. NO need for switching booster wheels to attain lower boost and lower rpm settings. Another great feature available only from R&D!

Part #802-01804 R&D R4 ECU; Reprogrammed ECU to allow 8850 RPM's, eliminated Boost limiter, aggressively advanced ignition timing that requires 100 octane Aviation fuel for high performance Pro Stock or Pro Limited racing use. R4 works great with stock, C1, C3, or C5 Monster Wheel Kits, or any wheel kit rated up to 18 pounds of boost.

Part #802-01805 R&D R5 ECU; Reprogrammed ECU to allow 8950 RPM's, eliminated Boost limiter, aggressively advanced ignition timing that requires VP MS 109 race gas for high performance Pro Stock or Pro Limited racing use. R5 works great with stock, C1, C3, or C5 Monster Wheel Kits, or any wheel kit rated up to 18 pounds of boost.

Part #802-01806 R&D R6 ECU; Reprogrammed ECU to allow 9000 RPM's, eliminated Boost limiter, aggressively advanced ignition timing that requires VP MS 109E fuel for high performance Pro Stock or Pro Limited racing use. R6 works great with stock, C1, C3, or C5 Monster Wheel Kits, or any wheel kit rated up to 18 pounds of boost.

Part #802-01807 R&D R7 ECU; Reprogrammed ECU to allow 9000 RPM's, eliminated Boost limiter, aggressively advanced ignition timing that requires VP C12 race gas for high performance Pro Stock or Pro Limited racing use. R7 works great with stock, C1, C3, or C5 Monster Wheel Kits, or any wheel kit rated up to 18 pounds of boost.

Part #802-01808 R&D R8 ECU; Reprogrammed ECU for 725cc injectors @ 52 psi fuel pressure, 8750 RPM's, eliminated Boost limiter, advanced ignition timing requires 91 octane pump gas for high performance recreational use. R8 is designed for the C5 Monster Wheel Kit or any wheel kit rated for 18 pounds of boost.

Part #802-01809 R&D R9 ECU; Reprogrammed ECU for 725cc injectors @ 52 psi fuel pressure, 8850 RPM's, eliminated Boost limiter, advanced ignition timing requires 100 octane Aviation fuel. R9 is designed for the C5 Monster Wheel Kit or any wheel kit rated for 18 pounds of boost.

Part #802-01810 R&D R10 ECU; Reprogrammed ECU for 725cc injectors @ 52 psi fuel pressure, 9000 RPM's, eliminated Boost limiter, advanced ignition timing requires VP MS 109 Race gas. R10 is designed for the C5 Monster Wheel Kit or any wheel kit rated for 18 pounds of boost.

Part #802-01811 R&D R11 ECU; Reprogrammed ECU for 725cc injectors @ 60 psi fuel pressure, 9000 RPM's, eliminated Boost limiter, advanced ignition timing requires VP C12 Race gas. R11 is designed for the C5 Monster Wheel Kit or any wheel kit rated for 18 pounds of boost.

Part #802-01812 R&D R12 ECU; Reprogrammed ECU for 1000cc injectors @ 60 psi fuel pressure, 9000 RPM's, eliminated Boost limiter, advanced ignition timing requires VP MS 109/C12 Race gas. R12 is designed for the C5 Monster Wheel Kit or any wheel kit rated for 18 pounds of boost.

NOTE: Rev Limiter settings can be raised or lowered upon request.

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R&D YAMAHA SHO/FZ/FZR POWERSHOT ADJUSTABLE FUEL TUNER

The new R&D Powershot Fuel Injection/Engine Tuning module for the YAMAHA SHO/FZR will deliver increased acceleration, stronger mid-range, and increased top speed performance by delivering a higher performing air to fuel ratio (A.F.R.) and allowing higher mass air/boost pressure levels to be utilized. R&D Performance has data logged and analyzed the O.E.M. fuel map and Fly By Wire functions on the new Yamaha SHO/FZR four stroke engine and has determined that one of the main horse-power and performance holdbacks in Yamaha's Fly by Wire E.C.U. system is the mass air or boost limitation that is controlled by the Fly by Wire Throttle System. The Yamaha E.C.U. manipulates and controls the mass air or boost pressure levels by closing the throttle plate which limits peak horsepower performance. The R&D Powershot interfaces with the E.C.U., fuel injectors, and sensors to unlock, take over, and control mass air or boost limitations. The R&D Powershot will allow the R&D C1 and C3 Monster Supercharger Wheels to perform to their full potential by defending against unwanted codes and internal E.C.U. limitations. The R&D Powershot comes pre-programmed and coded to safely alter the fuel map, intercept and recondition sensor voltage signals allowing up to 10 P.S.I. of boost pressure without throttle limitation or regulation. The R&D Powershot allows custom fuel tuning to cruise, acceleration, and top end zones. Top end fuel mixtures can be custom tuned from 13.5:1 (lean) to 11.5:1 (rich) on the fly. Quicker acceleration, stronger mid-range, and increased top speed performance is the result when the A.F.R. is tuned for optimum performance.

The R&D Powershot is fully adjustable to accommodate and properly performance tune the A.F.R. for any combination of aftermarket parts.
No more Boost Limiter!

Description	Part No.
R&D SHO/FZ/FZR Powershot Adjustable Fuel Tuner	802-18000

R&D YAMAHA VXR/VXS POWERSHOT ADJUSTABLE FUEL TUNER

R&D Powershot Fuel Injection/Engine Tuning module for the Yamaha VXR/VXS. The R&D Powershot will deliver increased acceleration, stronger mid-range, and increased top speed performance by delivering a higher performing air to fuel ratio (A.F.R.) R&D Performance has data logged and analyzed the O.E.M. fuel map on the Yamaha 1.8 N/A four stroke engine and documented that the fuel tables are a very green and stoichiometric. If quicker acceleration and stronger mid range power and the ability to have your cake and eat it too, then the Powershot is for you. The Powershot will allow you to adjust the fuel to either run green or mean. The R&D Powershot interfaces with the stock E.C.U., and fuel injectors allowing piggy back adjustments to the fuel table. The R&D Powershot comes pre-programmed and coded to safely alter the fuel map right out of the box for plug and play performance. The R&D Powershot allows custom fuel tuning to cruise, acceleration, and top end zones. Top end fuel mixtures can be custom tuned from 13.5:1 (lean) to 11.5:1 (rich) on the fly. Quicker acceleration, stronger mid-range, and increased top speed performance is the result when the A.F.R. is tuned for optimum performance. The R&D Powershot is fully adjustable to accommodate and properly performance tune the A.F.R. for any combination of aftermarket parts. Unlock the Yamaha VXR/VXS's full performance potential with an R&D Powershot Engine Tuner.

- Preprogrammed and Pre set to 12.5:1 (plug in and run)
- Allows overall fuel map tuning
- Utilizes O.E.M. ignition system
- Utilizes O.E.M. fuel injectors
- Retains all O.E.M. dash, warning, and service indicators
- 91 octane pump gas friendly
- Ultra easy 20 minute installation

For competition use only!

Description	Part No.
R&D VXR/VXS Powershot Adjustable Fuel Tuner	802-18010

VXR/VXS HIGH PERFORMANCE ECU REPROGRAMMING SERVICES

Part #802-02801 R&D R1 ECU; Reprogrammed ECU for the VXR/VXS offers improved ignition timing map advancements that produce quicker acceleration and top speed performance. The fuel maps are tuned to offer a cleaner than stock (leaner idle), clean and green cruise areas which will keep fuel consumption either the same or better than stock in the cruising ranges, and an overall improvement to top speed or wide open throttle ranges. The rev limiter is raised to allow up to 8150 RPM's that will promote a more positive pump hook up in rough water conditions. The R1 ECU programs are 89 and 91octane (pump fuel) safe. The R1 program file does not require a Powershot Fuel Tuner.

Part #802-02802 R&D R2 ECU; Reprogrammed ECU for the VXR/VXS offers improved ignition timing map advancements that produce quicker acceleration and top speed performance. The fuel maps are tuned to offer a cleaner than stock (leaner idle), clean and green cruise areas which will keep fuel consumption either the same or better than stock in the cruising ranges, improved hard acceleration enrichment for the hard core rider that want a more aggressive mid range acceleration, and an overall improvement to top speed or wide open throttle ranges. The rev limiter is raised to allow up to 8250 RPM's that will promote a more positive pump hook up in rough water conditions. The R2 ECU programs are 91octane (pump fuel) safe. The R2 ECU program can be used with R&D Performer, Stage 1 and 2 kits. The R2 program file does not require a Powershot Fuel Tuner.
NOTE: Custom Rev Limiter settings available upon request.

Description	Part No.
R&D Reprogrammed **R1** ECU for the VXR/VXS	802-02801
R&D Reprogrammed **R2** ECU for the VXR/VXS	802-02802

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RIVA/ATHENA PRO-SERIES ECU

The RIVA/ATHENA Pro-Series ECU provides a huge performance advantage to the Yamaha 1.8L Engine delivering over 50hp to the stock SHO engine. ECU is fully programmable with either RIVA supplied mapping or user adjustable parameters. Most calibrations require use 91+ octane pump fuel. Plugs directly into factory wiring harness via waterproof connectors.

Key Features Include:

1. Easy loading of supplied calibrations/maps for various performance applications.
   - Performance Fuel Mapping: Delivers optimal fuel required for your specific level of modification based on boost pressure.
   - Performance Timing Curves: Special racing curves produce more power throughout the RPM range.
   - Rev Limiter Increase: Stock rev limit can been increased so engine RPM can be run higher producing more boost pressure and horsepower.
   - Boost Control for turbo applications. (Plug & play connector for wastegate solenoid).
2. Retains all OEM dash display functions & Engine Safety Functions.
3. Provides diagnostic information that can be displayed via computer interface.
4. Includes plug & play connector for RIVA Dash/Logger unit (RY11840-LD-MD60).
5. Includes plug & play connector for optional lambda sensor kit (part# RY11540-LC1-6S5) for data logging air/fuel ratios & tuning functions.
6. Individual Cylinder Knock Control function protects engine. System identifies which cylinder is detonating by tracking firing order utilizing OEM knock sensor.
7. User selectable dual calibration capacity.

NOTE: RIVA Pro-Series ECU is for competition use only.

Description	Part No.
RIVA/Athena Pro-Series ECU	RY11841-ECU-HFPWC

RIVA/ATHENA DASH LOGGER

Our new RIVA/ATHENA Dash Logger allows you to monitor and log all critical engine functions along with internal GPS driven speed data. This completely waterproof unit plugs directly into RIVA/ATHENA ECU's and is compact enough to mount on handlebar cross-bar via optional mounting pad. Large easy-to-read backlit display provides data on user friendly selectable screens. All displayed engine & GPS data is logged for review through convenient computer download via USB port. GPS Track mapping function displays "live" lap times and related functions for buoy course training purposes. Features LED warning lights to notify operator of major engine concerns.

Key Features Include:

- Large easy-to-read backlit screen.
- Compact design allows handlebar mount with optional mounting pad.
- Rugged waterproof construction.
- Built in GPS provides speed & position info.
- Plugs directly into RIVA/ATHENA ECU with waterproof connector.
- Operates in unison with factory dash display.
- Selectable display modes include 3 user definable pages for custom data display.
- Easy to download "data file" allows review of engine functions & GPS data.
- Logger memory holds last 60 minutes of operation.
- Displays & logs the following data:
- Displays & logs MIN/MAX values of all data.
- GPS Track mapping displays & logs lap times.
- LED warning lights notify operator of engine concerns.

Description	Part No.
RIVA/Athena Dash Logger For RIVA/Athena Pro-Series ECU	RY11840-LD-MD60

Picture is for reference only. Colors may vary.

ELME TOOLS SEVED PRO HARDWARE

- Portable and autonomous, it does not need to be plugged to any other machine
- No PC or power connector is needed to service the PWC
- Key Programming
- Full Specialized technical support

Program updates are received via the internet. The dongle system allows this, and cables and dongles are included with each program. Program updates are free.

Description	Part No.
Seved Pro Hardware Base Unit	SEVED PRO
BRP Diagnostics Program	ADS400
BRP Key Programming	ADS401
Kawasaki Diagnostic Program	ADS402
Mercruiser Diagnostic Program	ADS403
Yamaha Diagnostic Program	ADS404
Hydrospace/Benelli	ADS405
Seved Pro Hardware Base Unit +ADS400+ADS401+ADS402+ADS404+ADS405	PWCPAK *(excludes ADS403)*
Seved Pro Hardware Base Unit +ADS400+ADS401+ADS402+ADS403+ADS404+ADS405	FULLPAK

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JE PISTON KITS FOR YAMAHA FX SHO 1800 (2009-2011)

PISTON KIT #	DISP.	BORE SIZE	OVER SIZE	COMP. RATIO	RING #	SLEEVE SURFACE
289959	1812cc	86mm	STD	8.6:1	JG1004-3386	Deglaze Only
292314	1812cc	86mm	STD	9.5:1	JG1004-3386	Deglaze Only
308631	1812cc	86mm	STD	10.5:1	JG1004-3386	Deglaze Only
308632	1812cc	86mm	STD	11.0:1	JG1004-3386	Deglaze Only
308633	1832cc	86.5mm	+.5mm	8.6:1	JG1004-3405	Bore & Hone
308634	1832cc	86.5mm	+.5mm	9.5:1	JG1004-3405	Bore & Hone
308635	1832cc	86.5mm	+.5mm	10.5:1	JG1004-3405	Bore & Hone
308636	1832cc	86.5mm	+.5mm	11.0:1	JG1004-3405	Bore & Hone

**Sold as Kit (4 pistons per kit)*
***Piston sold complete with: rings, piston pin and locks*

CP PISTON KITS FOR YAMAHA FX SHO (2009-2011)

PISTON KIT	DESCRIPTION	RING #
M1077	86mm Standard Bore (1812cc) 2009 - 11 Yamaha FX SHO 8.6:1 Turbo	CPN-3386
M1078	86mm Standard Bore (1812cc) 2009 - 11 Yamaha FX SHO 9.5:1 Turbo	CPN-3386
M1081	86mm Standard Bore (1812cc) 2009 - 11 Yamaha FX SHO 10.5:1 Turbo	CPN-3386
Oversize Pistons		
M1082	86.5mm .5mm oversize (1834cc) 2009 - 11 Yamaha FX SHO 8.6:1 Turbo	CPN-3406
M1083	86.5mm .5mm oversize (1834cc) 2009 - 11 Yamaha FX SHO 9.5:1 Turbo	CPN-3406
M1084	86.5mm .5mm oversize (1834cc) 2009 - 11 Yamaha FX SHO 10.5:1 Turbo	CPN-3406
Stock Bore: 3.386 (86mm)		

**Sold as Kit (4 pistons per kit)*
***Piston sold complete with: rings, piston pin and locks*

WISECO PISTON KITS FOR YAMAHA

Yamaha Model	Years	Bore x Stroke (mm)	Piston Kit Number	Replacement Ring Set	Pins & Clips
FX Cruiser HO FX SHO FZR FZS	2008-10 2008-10 2009-10 2009-10	86.00 x 78	40049M08600	8600XX	Wrist Pin S734 Circlips W5590
Displacement 1812.7cc • 8.6:1 Compression Supercharged 11.1 Compression Non-supercharged • ArmorGlide™ Skirt Coated ***Piston sold complete with: rings, piston pin and circlips.***					

**Sold individually*

FZR HIGH PERFORMANCE RACING CYLINDER SLEEVES YAMAHA 1.8L ENGINE

R&D High Performance Racing Sleeves are made to precise specifications specific for the Yamaha FZR/SHO Supercharged engine. R&D Racing Sleeves install easily and properly using the flanged "top hang" register design. The "top hang" design when installed and seated properly will not drop or slip which will allow 100 percent head gasket contact for a positive head gasket seal. R&D Racing Sleeves are manufactured from the highest grades of centrifugally cast "Molly 2000" Chrome Molly Iron Alloy to provide superior strength and hardness. Trouble free installation, boring, and honing using kit supplied installation instructions and tips on final hone specifications for O.E.M. cast and R&D Forged Racing Piston Kits are included. When the time comes to repair wavy, scored, seized, or worn cylinders trust the pros at R&D. We have been re-sleeving race engines for over 40 years. *Sleeves are sold individually.*

Description	Part No.
SHO/FZR High Performance Racing Cylinder Sleeves	432-18000
LA Sleeve Yamaha 1.8L Engine Cylinder Sleeve	YA-5688

RIVA/DARTON YAMAHA 1.8L PRO-SERIES CYLINDER SLEEVES

RIVA's new bulletproof sleeve system is the ultimate foundation for your high performance engine. Engineered specifically for the Yamaha SHO engine by Darton Sleeves, the leader in racing sleeve technology, these sleeves will hold up to extreme punishment in high boost applications. Innovative "Flat-Lock" flange design locks sleeves in place reinforcing block and protecting head gasket.

Key Features Include:
- Integrated Flat-Lock flange design protects block.
- Bulletproof Darton ductile steel construction.
- Increased horsepower potential.
- Ideal for high boost supercharged & turbo applications.
- Superior ring sealing.
- Can be installed by your local machine shop.

Description	Part No.
RIVA/Darton Yamaha 1.8L Pro-Series Cylinder Sleeves (Sold 4 sleeves per set)	RY10040-SLV-470

NGK SPECIAL SPARK PLUGS FOR FOUR STROKE ENGINES

Description	Part No.
Yamaha FX SHO/FX Cruiser, SHO/FZR (10 plugs per box) ***Solid Tip Plug***	LFR6A

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CARRILLO

CARRILLO CONNECTING RODS

Description	Part No.
Carrillo Connecting Rod Set Yamaha 1.8L 4 cylinder (sold 4 rods per set)	YA-FXSHO>-9M5709S-04

RIVA PRO-SERIES 4-STROKE CYLINDER HEAD STUD KITS

RIVA's ultra high strength cylinder head stud kit is essential equipment when upgrading internal components on your high boost Yamaha engine. Precision machined from premium grade 8740 alloy and heat treated to exacting tolerances, these studs dramatically increase reliability & ease of maintenance.

Key Benefits Include:

- Superior material & heat treat process provide 10X better fatigue strength than OEM bolts.
- Studs provide improved alignment of cylinder head and gasket for increased reliability and ease of maintenance.
- More accurate & consistent torque loading provides a more uniform clamping force on head gasket.
- Helps prevent blown head gaskets and assures optimum engine sealing.

Description	Part No.
RIVA Pro-Series Cylinder Head Stud Kits FX-SHO/FZR/FZS	RY10040-HSK

COMETIC GASKET

COMETIC YAMAHA 1.8L OEM REPLACEMENT HEAD GASKET

Description	Part No.
Cometic Yamaha 1.8L Engine Head Gasket 86mm*	C6221

Available up to 90mm

RIVA RACING

RIVA PRO-SERIES 4-STROKE CYLINDER HEAD GASKETS

Our Pro-Series Cylinder Head Gaskets were developed to withstand severe heat & pressure generated by high-boost and high horsepower applications delivering maximum reliability to your racing engine.

Key Benefits Include:

- Three layer stainless construction for durability & corrosion resistance.
- Viton coated & embossed surfaces for maximum sealing between head and cylinder block.
- Unique design promotes even torque load across sealing surface & requires no re-torque.

Description	Part No.
RIVA Pro-Series Head Gasket (Standard Bore) FX-SHO/FZR/FZS	RY10040-CHG-86

R&D

R&D FZR HIGH PERFORMANCE RACING HEAD GASKET

R&D High Performance Racing Head Gaskets were developed to replace the O.E.M. head gasket with a higher performing Multi Layer Steel Stack Design (MLS), utilizing state of the art materials proven to withstand extreme heat generated from high cylinder pressures in high boost performance packages. Each gasket is deep dual embossed (both sides) and Viton Coated to promote a positive seal. Use the R&D Head Gasket with confidence in standard replacement situations or Pro Race Engines. Our race proven design maintains a positive seal with up to 24 pounds of boost. Available in STD 86, 86.5, 87, 87.5, and 88mm bore sizes. R&D also offers a "Super Thin" Gasket that will raise the compression level when changing piston ratio is not an option.

NOTE: R&D also offers Custom R&D/CP High Performance pistons to fit any bore size R&D Head Gasket. Gas porting also available upon request.

NOTE: No need to re-torque the head bolts after initial installation which is a big plus on DOHC engines where cams would otherwise need to be removed. Head torque specifications are included with each gasket

Description	Part No.
R&D 86mm HP Head Gasket .027" 3 Layer	080-01800
R&D 86.5 HP Head Gasket .027" 3 Layer	080-01801
R&D 87 HP Head Gasket .027" 3 Layer	080-01802
R&D 87.5 HP Head Gasket .027" 3 Layer	080-01803
R&D 88 HP Head Gasket .027" 3 Layer	080-01804
R&D HP Head Gasket 0.18" 2 Layer (Specify Bore Size)	080-01810

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R&D HIGH PERFORMANCE DUAL VALVE SPRING KIT

R&D has developed an economical solution for upgrading the valve train by offering a series of upgrade parts that will work great with the O.E.M. retainer and valve seals. R&D has documented that the seat tension or pressure on the stock springs is a low 52-55 pounds, and coil bind on the stock springs occurs .050" after full lift on the stock cams. As an industry rule or standard, as boost levels are increased to the engine, the valve spring seat pressure should be increased 1-2 pounds per pound of boost. As an industry rule, as RPM'S are increased, the spring pressure at full lift should be increased as well to reduce or eliminate valve float at high rpm frequencies. With the stock springs "short lift travel" shimming is NOT an option. Valve Springs MUST be upgraded. Also to consider is valve spring travel at full cam lift, and to have enough spring clearance freedom to run high performance camshafts or add additional spring tension pressures without coil bind issues. The R&D spring kit parts were developed and used with stock retainers during the 2009 season and have proven their performance with an APBA/IJSBA Pro Open National Championship. R&D dual springs are a "lightweight design" and manufactured from ultra clean, high tensile material with multi step surface treatments to improve fatigue strength and reliability. NOTE: R&D Spring Kits must use the R&D Bottom Spring Retainer Cups kit Pt. # 612-93006 for proper assembly and seat pressures!

Engine Tuning Features
- 70-75 pounds at seat, 140-150 pounds at full lift (standard spec.)
- Shim friendly, add R&D spring collar base shims to add 2 pounds per .010 shim
- Allows the use of higher lift cams (up to +.080)
- Linear spring pressure curve allows smooth precision valve control
- High performance materials and surface finishes add to reliability

Description	Part No.
R&D High Perf Dual Valve Spring Kit (16 per kit)	612-93001

R&D HIGH PERFORMANCE VALVE SHIM KIT

The R&D spring base collar "shims" offer precision valve spring tension shimming to fine tune spring seat pressures based on boost pressures the engine will run at. The R&D shim kits are offered in the thicknesses of .010", .020", and .030".

Description	Part No.
R&D .010" Thick Shim Kit (set of 16)	612-93003
R&D .020" Thick Shim Kit (set of 16)	612-93004
R&D .030" Thick Shim Kit (set of 16)	612-93005

R&D HIGH PERFORMANCE BOTTOM SPRING RETAINER CUPS

R&D spring retainer cups will install under the R&D valve spring and support and house the bottom of the spring securely. The R&D Spring Retainer Cups must be used with the R&D spring kits for proper assembly. Use R&D Valve Spring Shim Kits to fine tune valve spring seat pressure.

Description	Part No.
R&D High Perf Bottom Spring Retainer Cups (set of 16)	612-93006

R&D HIGH PERFORMANCE VALVE STEM SEAL KIT

R&D offers High Performance Valve Stem Seal Kits manufactured from only the best high quality Viton rubber materials that will resist high valve guide and oil temperatures to maintain a good valve seal in all high rpm, high performance applications. When valve springs are changed out or periodic head service work is being performed, trust R&D Valve Stem Seal Kits at any performance level.

Description	Part No.
R&D High Performance Valve Stem Seal Kit	612-93007

RIVA YAMAHA 1.8L ENGINE PERFORMANCE VALVE SEALS

RIVA's high quality viton seals are extremely resistant to heat and abrasion. Superior sealing keeps unwanted oil from contaminating combustion chambers and prevents air leakage through valve guides. A precision seal removal & installation tool (RY19040-VST) is available separately. Sold in sets of 16.

Description	Part No.
RIVA Yamaha 1.8L Engine Performance Valve Seals	RY19040-PVS

RIVA YAMAHA 1.8L ENGINE VALVE RETAINER UPGRADE KIT

RIVA's Valve Retainer Upgrade Kit increases the reliability of your engine by reducing the possibility of valve float at high rpm. Includes 16 lightweight, precision-machined titanium valve retainers. A must for IJSBA & APBA Stock Class race craft.

NOTE: For modified engines (Stage 3 & above) we recommend the complete RIVA Valve Train Upgrade Kit (part # RY19040-VTU).

Description	Part No.
RIVA Yamaha 1.8L Engine Valve Retainer Upgrade Kit	RY19040-SRU

RIVA VALVE TRAIN UPGRADE KIT

RIVA's Valve Train Upgrade Kits increase the reliability of your modified engine by reducing the possibility of valve float at high rpm. Includes lightweight, precision-machined titanium valve retainers, racing valve springs, and base washers.

Description	Part No.
RIVA FX-SHO/FZR/FZS Valve Train Upgrade Kit	RY19040-VTU

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RIVA YAMAHA HIGH PERFORMANCE VALVE SET

Drop-In Valve Kits: Standard size drop-in direct replacement valves require no machining of cylinder head.
Oversized Valve Kits: +1mm Intake/+1mm Exhaust valves deliver more air flow (requires machining of cylinder head).

Key Features:
- Stronger & lighter than stock valves.
- Redesigned valve heads for improved air flow & strength.
- High grade stainless intake valves resist corrosion.
- Inconel exhaust valves resist heat from high boost applications.
- Valve stems are hard-chrome plated for improved wear.
- Includes high strength valve locks.
- Sold in sets of 16 (8 Intake/8 Exhaust).

Description	Part No.
RIVA Yamaha High Performance Valve Set **(Standard/Drop-in)**	**RY19040-HPV-0**
RIVA Yamaha High Performance Valve Set **(+1mm Intake / +1mm Exhaust)**	**RY19040-HPV-1:1**

RIVA YAMAHA 1.8L ENGINE VALVE SEAL TOOL

This handy tool provides easy removal and installation of valve stem seals on Yamaha 1.8L engines. Allows seal installation during fitting of valve train upgrade kit without removing cylinder head.

Key features:
- Prevents seal distortion & gouging.
- Precision machined from 6061 aluminum & anodized.
- Knurled handle for positive grip.

Description	Part No.
RIVA Yamaha 1.8L Engine Valve Seal Tool	**RY19040-VST**

RIVA YAMAHA 1.8L ENGINE VALVE LIFTER BUCKETS

RIVA Performance Valve Lifter Buckets are a "must have" item when upgrading your engine's valve train. Designed to withstand the stress of increased valve spring tension and RPM in modified engines that can cause stock components to fail. Our lightweight valve lifter buckets are CNC machined from heat treated billet steel providing superior strength and durability. Order one kit per engine.

Description	Part No.
RIVA Yamaha 1.8L Eng. Valve Lifter Buckets	**RY19040-BVL-KIT**

R&D VALVE STEM CONCENTRICITY GAUGE

The R&D Valve Stem Concentricity Gauge is a testing tool to check the roundness and trueness of valves. Small valves can distort or bend from heat produced in high performance supercharged or turbo charged engines. To achieve a perfect seal on the seat the valve needs to be concentric and true in every dimension. Gauge is fully adjustable to accommodate a variety of valve sizes and features a rigid, positive stop that can be set once and the trueness for an entire set of valves can be measured. Kit comes complete with dial indicator accurate to .001". This is a must have tool for any engine builder to get the most out of your high performance 4 stroke engine.

Description	Part No.
R&D Valve Stem Concentricity Gauge	**612-80010**

RIVA VALVE COMPRESSION TOOL

RIVA's overhead Valve Compression Tool allows easy removal of valve springs and keepers without removing cylinder head. Includes compression adapter to pressurize cylinder keeping valves in place during removal of stock springs and keepers. Fits both Yamaha 1.8L & Kawasaki 1.5L 4-stroke engines.

Description	Part No.
RIVA Valve Compression Tool Fits Yamaha 1.8L & Kawasaki 1.5L 4-stroke	**RY19040-VCT**

FZR VALVE SPRING COMPRESSION TOOL KIT

The R&D Valve Spring Compression Tool Kit allows easy removal of the intake or exhaust valve springs and keepers without removing the cylinder head. R&D recommends using the compression adapter from a compression gauge kit to pressurize cylinder keeping valves in place during removal of springs and keepers.

Description	Part No.
R&D FZR Valve Spring Compression Tool Kit	**612-92013**

FZR CAM TENSIONER TOOL

The R&D Cam Tensioner Tool is designed to mechanically spring preload the cam chain in order to set and verify cam timing. This eliminates the process of pressurizing the hydraulic cam tensioner to verify cam timing.

Description	Part No.
R&D FZR Cam Tensioner Tool	**612-92015**

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R&D YAMAHA FZ/FZR/SHO RC1 RACING CAM KIT

R&D's RC1 Recreational/Racing Camshaft kit offers a great boost in horsepower for the recreational rider/racer who wants as much lift and duration that can be "Bolted In" without valve spring changes or valve guide machining. The R&D RC1 will install and work well with O.E.M. valve springs and retainers. The RC1 is a great choice for recreational and offshore riding or racing targeting the 7500-8500 RPM range for top end power while also improving low and mid range performance. The secret to the R&D cam lobe is in the precision grind finish on the cams base circle and duration at .050". R&D maintains strict specifications in this area of the cam lobe which is the key to having strong vacuum, a great idle tune, and clean acceleration performance.

Overall lobe Lift and Durations are increased to allow as much lift as possible and still run O.E.M. "uncut" valve guides. R&D has improved the lobe profile with "state-of-the-art" technologies that will reduce valve lifter friction and improve valve lifter wear. The R&D "boost friendly" lobe profiles increased lift and duration will produce a noticeable horsepower increases and work well with C1, C3, and C5 Monster Wheels and also work well with R&D R1, R2, and R3 ECU Reprogramming Services. R&D RC1 custom cams can be installed easily and shimmed with basic hand tools and the O.E.M. service manual in as little as two hours without the removal of the head, or any valve spring or retainer parts. Call R&D today for further details and specifications for all your camshaft and valve train upgrades.

- Aggressive throttle response, increased overall horsepower
- Increased rpm performance (150-200 RPM Gain)
- Increased lift and duration (.368" lift and 6° degrees more duration)
- LC and LSA tunable (with R&D Cam Gears)
- 10-15 Bolt on Horsepower upgrade
- R&D R1, R2 and R3 ECU Compatible
- Works well with R&D Valve Spring Kit upgrades
- Easy installation

NOTE: The R&D RC1 Recreational Camshaft Grind Specifications have been extensively endurance tested to be the best lobe profile for recreational riding or offshore racing. The lift and duration are similar to the Yamaha 1800 N.A. cam with a total lift average of .368". The duration on the RC1 cam is less at .050" lift over the N.A., however, the same 6° degree duration advantage is in the recipe. That puts the RC1 comparable on lift, equal on overall duration and a strong low end vacuum to allow the use of R1, R2, and R3 ECU's. R&D has worked hard in the duration curve area of the cam paying careful attention to the duration at .050" and overall added duration.

The R&D recreational camshaft kit is a performance modification regrind that is performed in a normal 5-7 day turnaround to your existing camshaft cores. R&D also stocks Camshaft kits that can be mail ordered direct with a reasonable additional cam core charge. R&D camshaft specifications have been performance tested against the 1800 naturally aspirated cams, and clearly, there is no comparison in the tune ability area. R&D suggests that the FZ/FZR, and SHO supercharged engines should benefit greatly from a supercharger or turbocharger specific cam lobe profile and design. If installing the R1 Cams with R&D Pro Tune Cam Timing Gears, a MoTeC or comparable ECU must be used for tuning as aggressive lobe center changes will reduce engine vacuum to lower than 15 inches and special custom tuning will be required. R&D RC1 cams are a precision tolerance regrind. Valve lifter re-shimming will be necessary. R&D will supply shimming specifications with each cam set that will make valve adjustment easy. R&D recommends the use of Hot Cams Shim Kits also available from R&D.

Description	Part No.
R&D FZ/FZR/SHO RC1 Racing Cam Kit	612-93009

R&D YAMAHA FZ/FZR/SHO RC2 RACING CAM KIT

R&D's new RC2 Racing Camshaft kit offers a serious boost in horsepower for the racer who wants as much lift and duration that can be safely "Bolted In" without valve guide or spring base machining. The R&D RC2 Cam lobe profile has all of the same features in concept and design as our RC1 recreational lobe, accept for the increased lift and duration. The secret to the R&D cam lobe is in the precision grind finish on the cams base circle and duration at .050". R&D maintains strict specifications in this area of the cam lobe which is the key to having strong vacuum, a great idle tune, and clean acceleration performance.

Overall lobe Lift and Durations are increased to allow as much lift as possible and still run O.E.M. "uncut" valve guides. R&D has improved the lobe profile with "state of the art" technologies that will reduce valve lifter friction and improve valve lifter wear. The R&D "boost friendly" lobe profiles increased lift and duration will produce a noticeable horsepower gain and can also be tuned to custom LSA (lobe separation angles) when using R&D "Pro Tune" Cam Gears (Pt. # 612-93008). The R&D RC2 will produce noticeable horsepower gains over R&D RC1 recreational cams with improved gains from idle to wide open throttle. The RC2 Cam Kit really goes to work adding top end pulling power in the 8500-9500 rpm zone. R&D custom cams can be installed easily and shimmed with basic hand tools and the O.E.M. service manual. R&D High Rev Valve Spring and shim kit parts are required for the RC2 Cam Kit to work properly without coil bind damage. Call R&D today for further details and specifications for all your camshaft and valve train upgrades.

NOTE: The R&D RC2 requires the installation of R&D's High Performance Valve Spring kit as the O.E.M. valve springs will run into coil bind with the added lift on the RC2 lobe profile. The RC2 will also require the use of a stand alone ECU system such as a MoTeC M400 to custom tune the fuel and ignition for optimum performance.

- Aggressive throttle response, increased overall horsepower
- Increased rpm performance (RPM range increased to 9500)
- Increased CFM airflow
- Horsepower increase gain (with R&D Cam Gears)
- Aftermarket ignition is required for custom tuning
- Works well with R&D Valve Spring Kit upgrades (Required)
- Easy installation • Bolt on 25+ Horsepower Upgrade

NOTE: The R&D RC2 Racing Camshaft Grind Specifications have been Race Proven during the 2009 and 2010 racing seasons. No other camshaft has more lift and more duration than the RC2. The nearest competitor to date is the Yamaha 1800 N.A. Cam with a total lift average of .368". That puts the RC2 a full .020" higher. R&D has worked hard in the duration curve area of the cam paying careful attention to the duration at .050" and overall added duration. R&D is currently working on the RC3 Racing Cam available in mid October. The R&D RC2 camshaft kit is a performance modification that is performed in a normal 5-7 day turnaround to your existing camshaft cores. R&D also stocks Camshaft kits that can be mail ordered direct with a reasonable additional cam core charge. R&D suggests that the FZ/FZR, and SHO supercharged engines should benefit greatly from a supercharger or turbocharger specific cam lobe profile design and custom LC and LSA set up.

Description	Part No.
R&D FZ/FZR/SHO RC2 Racing Cam Kit	612-93010

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R&D YAMAHA FZ/FZR/SHO PRO TUNE ADJUSTABLE CAM GEAR KIT

R&D's Racing Cam Gear kit allows a huge boost in overall horsepower to be gained by custom tuning the camshafts LCA (lobe separation angle) set up. Tuning the LCA with R&D Pro Tune Cam Gears can add 200-300 RPM's, increased boost pressure, and 2-3 MPH to your existing engine package. Adjusting the camshafts LCA is a very simple "BOLT IN" modification with the R&D Pro Tune Adjustable Cam Gear Kit. Understanding the LCA concept principle is fairly easy. A wide LCA like found in the SHO and FZR will generally result in decreased valve overlap, later intake events, earlier exhaust events, and high intake manifold pressures which produce great idle, smooth accelerating with mild low and top end power. Wide LCA's are great for school buses and soccer mom vans. However, if strong mid range pull and top end horsepower is what you're looking for, then a narrower LCA will need to be generated. The R&D Pro Tune Cam Gear Kit allows the LCA (lobe separation) to be adjusted narrower which will generate increased valve overlap, earlier intake events, and later exhaust events. Resulting in snappier throttle response, increased mid range and top end power and more boost. Why spend big money on optional camshaft kits (i.e. 1800 N/A cams) that have proven to offer too narrow of LCA compromising idle tune? Buy the R&D Pro Tune Cam Gears designed specifically to improve overall power at a fraction of the cost and provide an optimum overall tune. The R&D Cam Gear Kit offers four possible LCA combinations that allow the cams to be tuned depending on the type of riding or racing and type of fuel. In fact, R&D has built a specific engine designated for degreeing, checking and proving camshaft specifications. Depend on the Pro's at R&D to deliver all your horsepower needs.

- Aggressive throttle response, increased overall horsepower
- Increased rpm performance (+200-300 RPM Gain)
- Boost Pressure Increase (+1 pound) • 15-25 Horsepower Increase
- Precision CNC Billet/Ground Cam Gears (lighter than stock)
- R&D R1, R2, and R3 ECU Compatible
- Works well with R&D Cam Regrind and Valve Spring Kit upgrades
- Easy installation • Bolt on Higher Horsepower Upgrade

NOTE: R&D has determined that the O.E.M LCA is a WIDE 120 degrees stock, with an intake cam lobe center of 122.5 degrees. Considering the LCA timing facts, using the R&D Pro Tune Cam Gears to tune the cams will generate huge performance power gains. R&D has found in testing that a 2.5 degree LCA change will act similar to a 1 pound boost addition. Tests have proven that an R&D C1 or C3 compressor wheel and a 7 degree LCA change can have the same performance advantages as a 15 pound compressor wheel. Call R&D for constant power upgrade information as we are constantly at work looking for more.

Description	Part No.
R&D Yamaha FZ/FZR/SHO Pro Tune Adjustable Cam Gear Kit	612-93008

R&D CAM TENSIONER GASKET

R&D's new Cam Tensioner Gasket has a metal reinforced center that enables it to be reusable.

Description	Part No.
R&D Cam Tensioner Gasket	080-21025

RIVA YAMAHA 1.8L ENGINE ADJUSTABLE CAM SPROCKET KIT

Adjustable Cam Sprocket Kit delivers a significant increase in horsepower, speed & RPM through easy cam timing adjustment. Our 'Quick-Tune' design features color coded timing inserts that lock-in desired cam adjustment in minutes without removal of cam tensioner, camshaft or cam sprocket (after initial installation). Design allows fast & easy timing adjustment; saving hours of time when testing and tuning. Sprockets are precision machined from billet steel and heat treated for maximum durability.

Key Features Include:
- Allows fast & easy adjustment of cam timing for maximum performance.
- Quick-Tune timing inserts lock-in cam timing in minutes.
- Designed for both SHO & HO Yamaha 1.8L engines.
- Works well with both stock and performance cams.
- Easy bolt-on installation.
- Includes complete instructions with tuning guide.

Description	Part No.
RIVA Yamaha 1.8L Engine Adjustable Cam Sprocket Kit	RY19040-ACS

TREY FRAME - BLACK STAR RACING
HOT PRODUCTS SPONSORED RIDER

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RIVA RACING YAMAHA FZR/FZS TURBOCHARGER SYSTEM
RIVA RACING YAMAHA FX-SHO TURBOCHARGER SYSTEM (2008-11)
RIVA RACING YAMAHA FX-SHO TURBOCHARGER SYSTEM (2012)
RIVA RACING YAMAHA VXR/VXS TURBOCHARGER SYSTEM

ENGINE KIT

- TiAL Sport racing turbocharger (water jacketed stainless steel turbine housing; Garrett GT30R ball bearing CHRA w/billet compressor wheel; integrated wastegate).
- Billet CNC machined aluminum turbo mounting bracket kit.
- Billet CNC machined aluminum exhaust manifold flange.
- Mandrel bent water jacketed stainless steel exhaust pipe (exhaust manifold to turbo).
- Stainless steel V-band clamps.
- Braided stainless steel oil line kit.

Description	Part No.
Turbocharge Engine Kit	RY18040-TEK

REAR EXHAUST KIT

- Mandrel bent water jacketed aluminum exhaust down pipe.
- A/F ratio sensor mount in exhaust tubing.
- Water injection system to suppress sound.
- Stainless steel hose clamps.
- Billet aluminum rear exhaust through-hull outlet (4-inch).

Description	Part No.
Yam FZR/FZS Turbocharge Rear Exhaust Kit	RY15050-TREK
Yam FX-SHO (2008-11)Turbocharge Rear Exhaust Kit	RY15040-TREK
Yam FX-SHO (2012) Turbocharge Rear Exhaust Kit	RY15070-TREK
Yam VXR/VXS Turbocharge Rear Exhaust Kit	RY15060-TREK

INTERCOOLER FOR FZR/FZS, FX-SHO (2008-12)

Description	Part No.
GEN-2' Power Cooler	RY17040-PC-I
Aluminum Intake Tube Kit (Turbocharger to Power Cooler)	RY17040-TIK
HKS SSQV Blow-off Valve Kit	RY17040-BOV-SSQV

INTERCOOLER FOR VXR/VXS

Description	Part No.
GEN-2' Power Cooler Kit	RY17060-PC
Includes Aluminum Intake Tube - Turbocharger to Power Cooler	
HKS SSQV Blow-off Valve Kit	RY17040-BOV-SSQV

AIR INTAKE KIT

- Genuine screen type K&N flame arrestor.
- Large 4" smooth-bore ducting.
- Water repellant pre-filter.
- Billet band clamps.

Description	Part No.
Yam FZR/FZS Turbocharge Power Filter Kit	RY13050-TPF
Yam FX-SHO (2008-11) Turbocharge Power Filter Kit	RY13040-TPF
Yam FX-SHO (2012) Turbocharge Power Filter Kit	RY13070-TPF
Yam VXR/VXS Turbocharge Power Filter Kit	RY13060

REQUIRED ADDITIONAL COMPONENTS:

- **Fuel & Intake**
  - -High Capacity Fuel Injectors
  - -Fuel Pressure Regulator Kit
  - -High Capacity Fuel Pump
  - -Intake Manifold Upgrade Kit
  - -RIVA/Wilson Billet Intake Manifold (over 18psi boost)
- **Engine Internals Upgrade Kit**
  - -Engine Internal Upgrade Kit
- **Engine Management**
  - -RIVA/Athena
  - -RIVA/Vi-PEC
  - -Mo TeC
- **Engine Cooling Upgrade Kit**
  - -Engine Cooling Upgrade Kit
- **Pump & Handling**
  - -Intake Grate
  - -Pump Impeller
  - -Modified Pump Housing
  - -Reduction Nozzle
  - -Ride Plate

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FZR
112-18001

R&D FZR AQUAVEIN INTAKE GRATE

The huge FZR pump intake demands strength and an extra large wing for maximum hook up. The new R&D FZR grate utilizes an all new ultra strong 3 bar front mount strut design to support a new "extra wide" forward mounted wing that is guaranteed to top load the FZ pump with enough water to stay hooked up and moving forward in the roughest water conditions. The new "SUPER DEEP" race legal bars are the biggest and strongest we have ever built to deliver unmatched strength. The new 3 bar concept and "Flat Faced" wide wing proved out to provide superior cornering over previous single bar designs. Big pump inlets need big grates, and that's what we have built.
* For proper installation R&D recommends the use of the R&D Pump Shoe Seal Kit (Pt. # 162-00007)

Description	Part No.
R&D FZR Aquavein Intake Grate	112-18001
R&D FZR Pump Seal Kit	162-00007

FX SHO
112-18000

R&D AQUAVEIN INTAKE GRATE

Description	Part No.
R&D FX SHO Aquavein Intake Grate	112-18000
R&D VXR/VXS Aquavein Intake Grate	112-18020

R&D PUMP SEAL KIT

R&D's new pump seal kit stuffs up all the unwanted cavities in the pump shoe that aid in producing cavitation. This kit offers a way to seal the pump shoe, which will reduce cavitation and increase pump efficiency and performance.

Description	Part No.
FX SHO Pump Seal Kit for OEM Intake Grate	162-00003
FX SHO Pump Seal Kit for RIVA Racing Intake Grate	162-00004
FX SHO Pump Seal Kit for R&D Aquavein Intake Grate	162-00005
FZR Pump Seal Kit for OEM Intake Grate	162-00006
FZR Pump Seal Kit for R&D Aquavein Intake Grate	162-00007
VXR Pump Seal Kit for Stock Scoop Grate	162-00008
VXR Pump Seal Kit for R&D Aquavein Intake Grate	162-00009

RIVA FZR/FZ STAINLESS STEEL TOP-LOADER INTAKE GRATE

RIVA's revolutionary new intake grate for FZR/FZS delivers the ultimate in speed, hook up & strength. All new design features oversized top loader wing and optimized inlet ramp for closed course and offshore racing. Bulletproof stainless steel construction makes this grate virtually indestructible and eliminates the need for additional restrictive support bars. Race bred design significantly reduces cavitation and provides superior handling along with unmatched durability in extreme conditions.

Description	Part No.
RIVA FX Stainless Steel Top-Loader Intake Grate	RY22050-1

RY22040

RIVA YAMAHA INTAKE GRATE

RIVA's Top-Loader intake grate improves hook up and handling in rough conditions. Center wing eliminates prop spin and cavitation found with the stock grate along with the SHO/VXR's tendency to drop on its nose when the throttle is let off at high speeds. Powder coated to prevent corrosion.

Description	Part No.
RIVA FX-SHO/08-10 FX Intake Grate	RY22040
RIVA VXR/VXS Intake Grate	RY21030

FX-SHO - RY25040

FZR/FZS - RY25050

RIVA PUMP SEAL KITS

Dramatically reduce cavitation and prop spin with our easy to install Pump Seal Kits. Location specific, molded inserts fill the voids in OEM pump inlet shoe that bleed air into pump causing cavitation. Recommended for modified craft using aftermarket intake grates. Includes detailed installation instructions.

Description	Part No.
RIVA FX-SHO Pump Seal Kit	RY25040
RIVA FZR/FZS Pump Seal Kit	RY25050

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R&D PRO SERIES RIDE PLATE

The new R&D Adjustable Ride Plate delivers a perfect balance of increased top speed performance, improved cornering capabilities, and superb straight line stability. The new adjustable design utilizes kit supplied shims to fine tune the performance for a perfect balance of speed/handling for rider weight or water conditions from drag to surf. Increased top speed performance and compromises nothing when turned loose in rough water conditions. The design utilizes the vital OEM hull protection stainless steel pads, which safely disperse the pressure loads from the ride plate over a larger area on the hull. The new R&D FZR Adjustable Pro Series Ride Plate will meet the demands in performance whether being used for weekend recreational riding, closed course racing, surf, or offshore competition. Made in the USA from cast aluminum and powder coated for corrosion resistance.

- Top speed improvement
- Adjustable design
- Unique multi-step concept
- Improved straight line stability
- Significantly improved cornering
- Reduced chine walking on high speed sweepers
- Drives through chop with superior stability
- Retains reverse gate operation

Description	Part No.
R&D FZR Pro Series Ride Plate	122-18001
R&D VXR/VXS Pro Series Ride Plate	122-18004

FX SHO
122-18000

R&D HIGH PERFORMANCE RIDE PLATE

The new R&D SHO Pro Series Ride Plate will meet the demands in performance whether being used for weekend recreational riding, closed course racing, or offshore competition. Increased top speed performance of .50 to 1 MPH over stock, and compromises nothing when turned loose in rough water conditions. Bow search with full fuel loads is alleviated completely.

- 1 MPH top speed improvement • Unique multi-step concept
- Improved straight line stability • Significantly improved cornering
- Reduced chine walking on high speed sweepers
- Drives through chop with superior stability
- Retains reverse gate mounting and operation

Description	Part No.
R&D FX SHO High Performance Ride Plate	122-18000

RIVA PERFORMANCE RIDE PLATE

RIVA's Ride Plate delivers the perfect balance of top speed and improved handling in a variety of water conditions and speeds. Its race bred design features deep channels for improved acceleration and traction in turns. Provides excellent straightline stability at high speed with reduced porposing. Utilizes stock ride plate support brackets and accepts OEM speedo sensor.

Key Benefits Include:

- Superior handling performance.
- Quicker planing & improved top speed.
- Reduced porposing.
- Improved straight line tracking at high speed.
- Race bred design.
- Improves acceleration, cornering and straight line handling.
- Turnable with included shims.
- Powder coated to prevent corrosion.
- IJSBA/APBA Race Legal.

Description	Part No.
RIVA FX-SHO Performance Ride Plate	RY21040
RIVA FZR/FZS Performance Ride Plate	RY21050
RIVA VXR/VXS Performance Ride Plate	RY21060

2010 World Finals • Lake Havasu, AZ
Photo Courtesy of Jin Omura

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RIVA FZ PRO-SERIES STEERING SYSTEM

Introducing the ultimate race proven steering system for your Yamaha FZR/FZS. Fully adjustable design features a dual tube steering head for maximum strength & rigidity. Directly replaces bulky OEM mechanism with a stronger & lighter unit that provides variable height and tilt positions. Delivers a precision feel and the confidence to push your craft to the limit with improved dependability and comfort. Bulletproof bar clamp will accept any 7/8" handlebar or 1 1/8" fat bar. Includes all necessary installation hardware and instructions. Requires use of aftermarket handlebars.

Key Features:
- Superior strength & rigidity over OEM system.
- Billet stainless steel steering shaft is much stronger than the OEM aluminum shaft.
- Cutting edge race styling.
- Variable height and tilt adjustment.
- Accepts both 7/8" bars & 1 1/8" bulge bars.
- Billet steering arm features adjustable "quick turn" settings.
- Retains Off Throttle Steering system.
- Race tested & proven on 2010 IJSBA/APBA tours.
- All aluminum parts anodized to prevent corrosion.
- Standard 3.5" tubes provide adjustment +/- 1" from OEM low position.
- Optional 5-1/2" & 7-1/2" tubes provide additional height choices.

Description	Part No.
RIVA FZ /FZS Steering System	RY20050-U-3.5
5 1/2" Tube Kit	RY20050-RK-5.5
7 1/2" Tube Kit	RY20050-RK-7.5

SATO ENGINEERING FZR/FZS STEERING SYSTEM

This billet steering system is the ultimate upgrade for the new Yamaha FZ watercraft. The system is extremely strong and allows the rider to change to handlebars of their choice.

Description	Part No.
Sato Engineering FZR/FZS Steering System	SE-027020

RIVA VXR/VXS PRO-SERIES STEERING SYSTEM

RIVA's VXR/VXS steering system directly replaces bulky OEM mechanism with a stronger & lighter unit that provides variable tilt adjustment. Delivers a precision feel and the confidence to push your craft to the limit with improved dependability and comfort. Bulletproof bar clamp will accept any aftermarket 7/8" handlebar or 1-1/8" fat bar. Includes all necessary installation hardware and instructions. Requires use of aftermarket handlebars.

Key Features:
- Superior strength & rigidity over OEM system.
- Billet stainless steel steering shaft is much stronger than OEM aluminum shaft.
- Cutting edge race styling.
- Variable tilt adjustment.
- Accepts both 7/8" bars & 1-1/8" fat bars.
- Billet steering arm features adjustable "quick turn" settings.
- Retains Off Throttle Steering system.
- Integrated throttle cable retention bracket.
- All aluminum parts anodized to prevent corrosion.

Description	Part No.
RIVA VXR/VXS Pro-Series Steering System	RY20060-U

R&D FX-SHO/FZR/FZS BILLET STEERING SYSTEM KITS

The new R&D Billet Steering System was developed and tested during the 2009 APBA/IJSBA National and World Championships and is a proven winner in design and performance. R&D's Billet design offers superior strength and lighter weight over the OEM steering system. Utilizing a 7/8" MX handlebar, allows the rider to personalize the bar setup to their liking. R&D chose the 7/8" diameter bar type over the Fat bar, because of the space watercraft bars need for start/stop switches, VTS switches, and custom trim lever systems. When using fat or taper bars, the bar widths are forced wider than comfortable in a watercraft application.

R&D offers two types of Handlebars for the new billet steering system, MX Low for short to average height pilots and MX high for taller pilots. Handlebars sold separately. The R&D Steering System is the way to go when setting up the ergonomic steering comfort "your way".
- 3 pounds lighter than stock system
- Easy installation (1 hour) includes all hardware and instructions
- Increases overall comfort and handling performance
- Allows custom bar setups (set up your way)
- Utilizes 7/8" diameter handlebars of our choice
- Adds a true "Factory Racing" look to your watercraft

Description	Part No.
R&D FZR / FZS Billet Steering System	512-18000
R&D FX-SHO Billet Steering System	512-18001

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R&D YAMAHA FX-SHO/FZR/FZS SPONSON KIT

The new R&D Yamaha SHO Pro Series Sponson Kit was designed and developed with all new generation performance concepts in mind to deliver a whole new level of handling and speed performance with offshore and closed course race proven adjustability options. The R&D Pro Series Sponson Kits have been extensively offshore, race track, and 1 and 2 up recreational tested to guarantee a comfortable setting for any riding style or condition! The R&D Sponson Kit will deliver higher top speed performance and a much smoother and more predictable ride over O.E.M. sponsons. Low speed and high-speed turns are a breeze with new found control. The secret to R&D's new generation concept is in the backing plate design with an aftermarket first, low pressure, low friction concept that breaks up and relieves speed robbing drag within the sponson's backing plate channel. The new R&D design staggers the sponson blades fins water trapping area to pick up less water in the front and more in the back. The stagger/step-up concept greatly reduces chine walk in high speed corners, while allowing more rear end grip. There is also a higher end recreational/race setting with enough grip for the best of pro's! Finally there is an aftermarket sponson kit that really does it all! More top speed due to less drag, less chine walking, racer preferred rear end grip, and unmatched straight line stability.

Description	Part No.
R&D FX-SHO Sponson Kit	122-01800
R&D FZR/FZS Sponson Kit	122-01801
R&D VXR/VXS Sponson Kit	122-01820

RIVA YAMAHA FX-SHO/FZR/FZS/VX SPONSON KIT

Unique blade design provides a significant improvement to the handling characteristics. Reduces rough water hunting and rolling sometimes experienced with stock sponsons. Sponson depth is adjustable to control the amount of influence they have on craft. Easily installs to stock mounting points with our bulletproof mounting system that features billet inserts in sponson fins.
Fits all Yamaha FX-SHO, FZR, FZS & VX models.

Description	Part No.
RIVA FX-SHO/FZR/FZS/VX Sponsons Kit	RY2625

WORX RACING YAMAHA SHO/FZR/FZS SPONSONS

Fitting Worx sponsons provide unbelievable cornering, better control in the rough and predictable inline tracking while towing wakeboards or waterskiers. Worx sponsons are easy to fit, look great and bolt right into stock mounting holes.

Description	Part No.
Worx Racing FX-SHO Sponsons Kit	WR542
Worx Racing FZR/FZS Sponsons Kit	WR543

R&D FX-SHO/FZR/FZS/VXR/VXS AUTO TRIM NOZZLE KIT

The R&D FX-SHO/FZR/FZS Auto Trim Kit was developed to accommodate the O.E.M. VTS Quick Shift System with a fully adjustable and fully automatic trim system! The R&D Auto Trim automatically drops a rider preferred and adjustable 2-8 degrees. Drive from turn to turn never worrying whether the trim is in the best position for perfect turn negotiation! The R&D Auto Trim allows you to set the trim up your way to carve perfect turn every time! For long straight rides the R&D Auto Trim System works in conjunction with O.E.M VTS, so stock trim settings are retained, while the R&D Auto Trim takes over in the turns. The combination allows the best of both worlds for recreational and closed course riding!

Description	Part No.
FX-SHO/FZR/FZS/VXR/VXS Auto Trim Nozzle Kit	162-18020

R&D FX-SHO/FZR/FZS HYDRO FORCE STEERING NOZZLE

R&D's new Hydro Force Steering Nozzle for the FX-SHO/FZR/FZS is a direct replacement nozzle. The new lengthened design delivers a full 1 MPH speed gain over stock. The adjustable pivot position improves the turning radius allowing you to carve tighter turns with a more positive feel. Improved performance through speed, acceleration and handling.

Description	Part No.
R&D FX-SHO/FZR/FZS Hydro Force Steering Nozzle	162-14000

R&D FX-SHO/FZR/FZS VTS QUICK SHIFT CAM KIT

The R&D FX-SHO/FZR/FZS VTS Trim Driver Cam is a cam device that installs directly in place of the O.E.M. plastic VTS trim driver cam. The R&D cam is designed to recalibrate the trim position amount from an O.E.M. 7 to 8 degree per shift to a finer and speed friendly 4 degree per shift. The O.E.M. SHO neutral position setting is 85 degree or 5 degree up from horizontal zero. The new recalibrated position with the new R&D Trim Cam is 87.5 degrees or 2.5 degree up from horizontal zero. The R&D Trim Cam will deliver a more positive group of adjustments that will allow much better turning capabilities, as well as finer adjustments for rough water conditions. The R&D Trim Cam will work with the O.E.M. trim nozzle assembly, or the R&D Auto Trim Kit.

Description	Part No.
R&D FX-SHO/FZR/FZS VTS Trim Driver Cam Kit	162-18010

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R&D FX-SHO/FZR/FZS/VXR/VXS PERFORMANCE EXIT NOZZLE

The new R&D cast aluminum exit nozzle is designed to fine tune the pump and prop to maximize performance and rpm. The new R&D exit nozzle is available in 2.5 and 5 degree up sweep angles. The 5 degree positive angle lightens the nose of the craft and adds top speed; this is great for recreational use. The 2.5 degree delivers improved performance in rough water conditions by producing more nose pressure to drive the hull through the bumps; this design is perfect for closed coarse and offshore competition. Both types are available in bore sizes of 80, 80.5, 81, and 81.5. *Custom bore sizes from 80 to 90 available at no extra charge, specify size when ordering. The maintenance free R&D cast aluminum and powder coated one piece construction exit nozzle is the better alternative to a removable ring design. With the new R&D nozzle the OEM reliability and safety is retained, because there is not a removable ring sleeve to vibrate loose, falls out and gets wedged in the steering nozzle creating a whole new definition to the term BUCKING.

Description	Part No.
R&D Perf. Exit Nozzle 2.5 degree 80mm	162-82800
R&D Perf. Exit Nozzle 2.5 degree 80.5mm	162-82805
R&D Perf. Exit Nozzle 2.5 degree 81mm	162-82810
R&D Perf. Exit Nozzle 2.5 degree 81.5mm	162-82815

Custom bore sizes available at no extra charge, specify size when ordering

Description	Part No.
R&D Perf. Exit Nozzle 5 degree 80mm	162-85800
R&D Perf. Exit Nozzle 5 degree 80.5mm	162-85805
R&D Perf. Exit Nozzle 5 degree 81mm	162-85810
R&D FZR Perf. Exit Nozzle 5 degree 81.5mm	162-85815

Custom bore sizes available at no extra charge, specify size when ordering

RIVA FX-SHO/FZ PRO-SERIES REDUCTION NOZZLE

Our Pro-Series Reduction Nozzle is ideal for tuning your Yamaha pump combination to maximize performance. Nozzle exit diameter can be easily changed via interchangeable ring system. Looking for more RPM or acceleration power? Insert a larger diameter ring. Want more top speed or less RPM? Install a smaller diameter ring. Nozzle includes three precision-machined stainless steel rings in graduated sizes (81, 82 & 83mm). Additional ring sizes available.
Note: Nozzle eliminates water spout function to maximize performance and conform to racing safety rules.

Description	Part No.
RIVA FX-SHO/FZ Pro-Series Reduction Nozzle	RY23040-N

R&D FX-SHO/FZR/FZS/VXR/VXS ANTI-CAVITATION CONE

The R&D Anti-Cavitation Pump Cone Kit will reduce overall internal pump cavitation within the Yamaha's offset reduction/compression nozzle design. The O.E.M. reduction/compression nozzle is offset, while the O.E.M. pump cone/bearing cap remains straight which causes uneven pressures within the pump and reduction nozzle. The R&D Anti-Cavitation Pump Cone is offset and reshaped to match the O.E.M. reduction nozzle offset promoting even pressures, which will substantially reduce cavitation, increase pump hook up, boost acceleration, and increase top speed performance.

Description	Part No.
R&D Anti-Cavitation Cone	162-18000

SHO/FZR R&D ANTI-CAVITATION TRANSOM PLATE MACHINING MODIFICATION

R&D's new SHO/FZR Anti-Cavitation Transom Plate Machining Modification service is now available. The engineers at R&D have been successful at reducing pump cavitation by removing the restriction in the OEM Transom Plate. The OEM Transom Plate has a 3mm taper that restricts water flow in front of the prop. Removing this restriction significantly reduces cavitation and improves holeshot and hook up with any prop type or diameter. The service includes line boring the Transom Plate and blue printing the new pump shoe diameter to blend with the R&D Aquavein Intake Grate, and the sealing surface of the transom plate where it mounts the hull is also improved by plugging the OEM casting pocket in the face of the Transom Plate with R&D's Sure Seal Urethane Material. R&D also offers the service to a new OEM Transom Plate available for immediate shipping.

Description	Part No.
R&D Transom Plate Machining Service	162-18004
R&D Complete new FZR Transom Plate w/Machining Service	162-18005
R&D Complete new SHO Transom Plate w/Machining Service	162-18006

RIVA BILLET DRIVESHAFT SLEEVE KITS

RIVA's precision machined Billet Driveshaft Sleeve is a direct replacement for the thin factory rubber hose that is prone to distortion and failure. Sleeve is constructed of 6061 aluminum and is anodized to prevent corrosion. Kit includes high quality silicon couplers and stainless steel clamps. This upgraded sleeve kit is highly recommended for performance applications due to increased pump pressure that accelerates failure of original rubber hose.

Description	Part No.
RIVA Billet Driveshaft Sleeve Kit FX/FZ All	RY30040-DSS
RIVA Billet Driveshaft Sleeve Kit VXR/VXS	RY30060-DSS

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Skat-Trak USA
PERFORMANCE PRODUCTS

SKAT-TRAK FX-SHO/FZR/VXR/VXS 155-75-25 SWIRL IMPELLERS

Includes a billet nose boot and impeller wrench.

Model	Year	Stock	Limited	Modified
FZR	09-12	12/20	------	-----
FZS	09-12	11/19	-----	-----
VXR	2012	11/18	12/19	13/20
VXS	2012	11/18	12/19	13/20
FX-SHO	08-12	11/19	-----	-----
FX-Cruiser HO	08-12	11/19	------	-----

Description	Part No.
Skat-Trak FX-SHO/FZR/FZS 11/19	**SY557525SW1119**
Skat-Trak FX-SHO/FZR/FZS 12/19	**SY557525SW1219**
Skat-Trak FX-SHO/FZR/FZS 12/20	**SY557525SW1220**
Skat-Trak FX-SHO/FZR/FZS 13/20	**SY557525SW1320**
Skat-Trak FX-SHO/FZR/FZS 13/21	**SY557525SW1321**
Skat-Trak FX-SHO/FZR/FZS 13/22	**SY557525SW1322**
Skat-Trak FX-SHO/FZR/FZS 13/23	**SY557525SW1323**
Skat-Trak FX-SHO/FZR/FZS 13/24	**SY557525SW1324**
Skat-Trak FX-SHO/FZR/FZS 13/25	**SY557525SW1325**

SKAT-TRAK FX-SHO/FZR TWIN IMPELLERS

The new Twin Prop design drives of the line much quicker than the traditional single prop, and offers a substantial increase in rough water hookup.

	Engine Mods	Pitch	Part No.
Main Drive	Stock	12/18	**SY557525SWM1218**
Main Drive	Limited	12/20	**SY557525SWM1220**
Main Drive	Supermod	13/23	**SY557525SWM1323**

	Engine Mods	Pitch	Part No.
Inducer	Stock	12/17	**SY440ID1217**
Inducer	Limited	12/17	**SY440ID1217**
Inducer	Supermod	14/18	**SY440ID1418**

RIVA RACING

RIVA SOLAS DYNAFLY R-SERIES IMPELLER

This all new impeller delivers unmatched acceleration & top speed in Yamaha FX-SHO/FZ applications. The "R" Series impeller is precision tuned to RIVA specifications using a pitch block fixture. This offers a higher level of consistency when matched with RIVA Performance Kits. Includes billet impeller cone that locks solidly into place with 3 stainless set screws. Ideal for RIVA Stage 1 applications or higher levels of modification when matched with RIVA Pro-Series FX-SHO/FZ Reduction Nozzle (part# RY23040-N).

Description	Part No.
RIVA Solas Dynafly Impeller 13/22R	**YS-DF-13/22R**

Solas Recommends:	Part No.
FX-SHO/FZ Stock Replacement Impeller	**YS-DF-14/21**
FX-SHO/FZ Limited Boat Replacement Impeller	**YS-DF-15/22**

R&D

FX-SHO/FZR/FZS/VXR/VXS R&D PRO COMP CLUTCH SAVER BILLET DRIVELINE COUPLER SET

R&D Performance is proud to announce the release of the new SHO/FZR Pro Comp Clutch Saver Driveline Couplers. The new clutch saver design increases the rotational mass of the 1800cc engine. The engineers at R&D added approximately 1.5 pounds of weight to the driveline couplers to increase the rotational mass of the engine. The added mass dampens the moment of inertia and absorbs shock that the supercharger clutch and pump impeller receive each time the engine accelerates. The result is smoother engine performance with added clutch life and reduced prop shock and cavitation. These precision couplers are made from billet aircraft aluminum and CNC machined to exact tolerance.
Also available for MOD SHOP conversion hull kits.

Description	Part No.
R&D Billet Coupler Set SHO/FZR/VXR/VXS	**612-01801**

FX-SHO/FZR/FZS/VXR/VXS IMPELLER SHAFT HOLDER TOOL

Developed specifically for the FX-SHO/FZR/FZS/VXR/VXS watercraft, this tool is required to change the impeller. 20mm splined.

Description	Part No.
FX-SHO/FZR/FZS/VXR/VXS Impeller Tool	**TOOL #53**

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RIVA FZ BILLET MIRROR BLOCK-OFF KIT

RIVA's billet Block-off Kit covers the opening left in the hood when mirrors are removed for competition. Enhances craft's sleek lines and aerodynamics. Easy installation requires no special tools. Precision machined from billet aluminum and anodized to prevent corrosion. Includes installation hardware.

Description	Part No.
RIVA FZR/FZS Billet Mirror Block-Off Kit	RY5-FZ-MB

RIVA VXR/VXS/VX MIRROR BLOCK-OFF KIT

RIVA's billet Block-off Kit covers the opening left in the hood when mirrors are removed for competition. Enhances craft's sleek lines and aerodynamics. Easy installation requires no special tools. Precision machined from billet aluminum and anodized to prevent corrosion. Includes rubber mounting pad & installation hardware. Fits all 2010-2011 VX & 2011 VXR/VXS.

Description	Part No.
RIVA VXR/VXS/VX Mirror Block-off Kit	RY5-VXR-MB

RIVA VXR/VXS/VX REAR STORAGE TUB

Add 4 gallons of convenient under-seat storage to your VX or VXR/VXS watercraft. Durable plastic storage tub removes easily to allow access for maintenance. Fits all 2010-2011 VX & 2011 VXR/VXS

Description	Part No.
RIVA VXR/VXS/VX Rear Storage Tub	RY4-RST-060

RIVA PERFORMANCE RECOMMENDATION PARTS LIST

YAMAHA FX-SHO - STAGE 1

PERFORMANCE DATA

Stock	67 MPH @ 7,500
Stage 1	**70-71 MPH @ 7,600 RPM**

Note: All testing performed with 1/3 tank of fuel; trim neutral.

Stage 1 Performance Parts

Description	Quantity	Part No.
Performance Power Filter Kit	1	RY13040
Intake Manifold Upgrade Kit	1	RY12040-IMUK
Free Flow Exhaust Kit	1	RY16040
Pump Seal Kit	1	RY25040
Top-Loader Intake Grate	1	RY22040
R-Series DynaFly Impeller	1	YS-DF-13/22R
Performance Ride Plate	1	RY21040

YAMAHA FZR - STAGE 1

PERFORMANCE DATA

Stock	67 MPH @ 7,500
Stage 1	**70-71 MPH @ 7,600 RPM**

Note: All testing performed with 1/3 tank of fuel; trim neutral.

Stage 1 Performance Parts

Description	Quantity	Part No.
Performance Power Filter Kit	1	RY13040
Intake Manifold Upgrade Kit	1	RY12040-IMUK
Free Flow Exhaust Kit	1	RY16040
Pump Seal Kit	1	RY25050-1
Stainless Steel Intake Grate	1	RY22050-1
R-Series DynaFly Impeller	1	YS-DF-13/22R
Performance Ride Plate	1	RY21050

2012 IJSBA Hot Products Mark Hahn Memorial Havasu 300 Endurance Race in Lake Havasu City, Arizona
Aero Aswar from Indonesia

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JETTRIM CUSTOM ORDER SEAT COVER

Description	Part No.
Jettrim FZR (09-11) Spike Design Custom Seat Cover	YFZR101
Jettrim FZR (09-11) Retro Design Custom Seat Cover	YFZR102
Jettrim FZR (2012) Custom Design Seat Cover	YFZ105
Jettrim FZS Retro Design Custom Seat Cover	YFZS101
Jettrim FZS Spike Design Custom Seat Cover	YFZS102
Jettrim FX-SHO Custom Design Seat Cover	YSHO101
Jettrim VXR Custom Design Seat Cover	YVXR101

PRE-COLORED HOT PRODUCTS RECOMMENDED JETTRIM SEAT COVERS

FZR Series (09-11)

YFZR101-B
Top: *Black Diamond Plate Non-Slip Vinyl*
Front & Rear Side: *Carbon Black Large*
Spike: *Smooth Light Green Vinyl*
Rear: *Black Ostrich*
Stitch: *Green Thread on Top*

FZR Series (2012)

YFZR105-A
Top Front: *Medium Slip Black*
Top Rear: *Medium Slip Silver*
Front Collar: *Carbon Red Vinyl*
Center Band & Tail: *Carbon Red Vinyl*
Side & Back Rest: *Smooth Black Vinyl*
Stitch: *Red Thread*

FZS Series

YFZS101-B
Front: *Kevlar Black*
Top 1: *Medium Slip Silver*
Top 2: *Smooth Grain Red*
Rear Top: *Medium Slip Black*
Rear Tail: *Smooth Grain Red*
Side: *Carbon Black*
Tail: *Medium Slip Black*
Rear Side: *Carbon Dark Silver*

VXR Series

YVXR101-A
Top Front: *Medium Slip Silver Vinyl*
Top Rear: *Medium Slip Black*
Front Collar: *Carbon Dark Blue Vinyl*
Center Band & Tail: *Carbon Dark Blue Vinyl*
Side & Back Rest: *Smooth Black Vinyl*
Stitch: *Blue Thread*

YVXR101-C
Top Front & Rear: *Non Slip Black Diamond Plate Vinyl*
Front Collar: *Smooth Grain Black Vinyl*
Center Band & Tail: *Smooth Grain Black Vinyl*
Side: *Carbon Black*
Back Rest: *Bright Orange*
Stitch: *Orange Thread*

HYDRO-TURF PREMIER CUSTOM ORDER SEAT COVER

Description	Part No.
FX-SHO Custom Designed Seat Cover	AZ-SEWFX1
FZR Custom Designed Seat Cover	AZ-SEWFZR
FZS Custom Designed Seat Cover	AZ-SEWFZS

PRE-COLORED HOT PRODUCTS RECOMMENDED HYDRO-TURF SEAT COVERS

Description	Part No.
Shown in Gray Vinyl and Black Carbon Fiber with Black Stitching	AZ-SEWFX1-A

Description	Part No.
Shown in Black Gripper, Silver Carbon Fiber and Vinyl wIth White Stitching	AZ-SEWFZR-A

Description	Part No.
Shown in Black Gripper, Silver Carbon Fiber and Black Vinyl with White Stitching	AZ-SEWFZS-A

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